Environmental Considerations and Sustainability of Base Camps in Contingency Operations

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Agenda

- **EN CALL CAAT TM (31 Jul – 22 Aug 2010)**
- **Environmental Considerations & Sustainability Study**
- **Capability Based Assessments**
  - **Base Camps for Full Spectrum Operations**
  - **Sustainment**
- **Way Ahead**
- **Conclusions**

Base Camps throughout our History











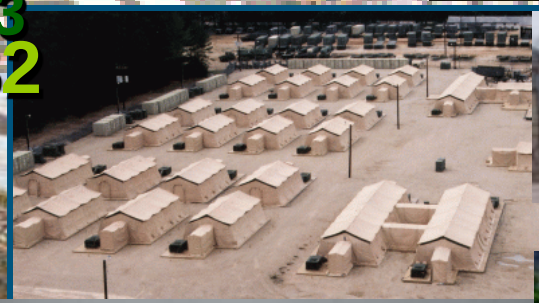



1775
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2011

Encampments
Life Support Areas
Major Supply Points
Secure Lines of Communication
Enable Power Projection

Background

- US Forces are currently required to conduct extended operations over time in deployed locations.
- Over time, these deployed locations may evolve into enduring base camps.
- There are currently no standards addressing the planning, design, construction, operations, management , transfer or closure of base camps – In the past 20 years the Army has established over 1000 base camps; each one was a “one off” effort.
- “The United States Army Concept Capability Plan for Army Base Camps in Full Spectrum Operation for the Future Modular Force.” (TRADOC Pamphlet 525-7-7) addresses the planning, design, construction/deconstruction, operations and management of base camps.
- G-4 has established a Contingency Basing Community of Practice (CoP)/Council of Colonels (CoC)
- ASA IE&E has been given direct oversight role

Environmental Considerations and Sustainability Issues are prevalent across all types and sizes of base camps

Purpose and Scope

- **Purpose**
  - Provide an overview of Contingency Base Camps as viewed in the 2010 US Army Engineer School (USAES)/Center for Army Lessons Learned (CALL) Afghanistan Collection Trip August of 2010.
  - Present an Analysis of the requirements, existing capabilities and associated gaps relating to the environmental considerations and sustainability during Contingency Operations
- **Scope**
  - Recent Studies and Analysis
  - Contingency Basing Community of Practice Efforts
  - Recent Capabilities Based Assessments
  - Multiple scenarios

Why is this Important?

- **Current & future operations DO and WILL require distributed FOBs to enable position & influence in asymmetrical warfare**
- **Serious shortfalls exist in our current approach to base camps that put our warfighters and mission success at risk**
- **Providing integrated solutions to these shortfalls will yield**
  - Reduced “Tail to Tooth” ratio
  - Force multiplication
  - Casualty reduction
  - Energy Security

Since the beginning of recorded history, the place where the Soldier lay to rest, refit and prepare for battle has been a necessary evil that drained combat power & whose vulnerability has been a profound weakness

Why Now?

The Washington Post

Alarms sound over trash fires in war zones of Afghanistan, Iraq

U.S. Army soldiers are seen through the haze of burning trash as they patrol in Baqouba, Iraq, Oct. 6, 2006. (AP Photo/Hoge Alexander)

WASHINGTON — Hundreds of military service members and contractor employees have fallen ill with cancer or severe breathing problems after serving in Iraq and Afghanistan, and they say they were poisoned by thick, black smoke produced by the burning of tons of trash generated on U.S. bases.

-*Washington Post, 6 August, 2010*

"The military personnel and civilian workers say they inhaled a toxic haze from the pits that caused severe illnesses. Six with leukemia have died, and five are being treated for the disease, a cancer of the blood and bone marrow. At night, more than a dozen rely on machines to help them breathe or to monitor their breathing; others use inhalers."

Army Audit Agency – 20 May 2010

1. The Army does not have a Secretariat-level proponent for base camps.

2. The Army does not have an overall strategy to establish, sustain, and transition Non-Traditional Installations (NTIs); the Army and its Soldiers no longer possess the skills required to properly manage base camps in deployed or contingency environments.

3. The Army did not implement the strategic goals it established for NTIs and did not appoint a proponent for NTIs.

4. Doctrine and training did not evolve with the changes resulting from Army transformation.

"Non-traditional installations (NTIs) are overseas locations that Army service component commands (ASCCs) establish and manage to support the full range of military operations. These locations include forward operating sites, cooperative security locations, and base camps."

NTIs can be found in any region and combatant command; every situation from humanitarian relief to peacekeeping to combat.

– US Army Audit Agency, "Army Strategy for Establishing, Sustaining, and Transitioning Non-Traditional Installations," 20 May 2010

The New York Times

Electrical Risks at Iraq Bases Are Worse Than Said

WASHINGTON — Shoddy electrical work by private contractors on United States military bases in Iraq is widespread and dangerous, causing more deaths and injuries from fires and shocks than the Pentagon has acknowledged, according to internal Army documents.

-*NY Times, 18 July, 2008*

Ten buildings were destroyed late last month at a Marine base near Fallujа, Iraq, after an electrical fire broke out.

During just one six-month period — August 2006 through January 2007 — at least 283 electrical fires destroyed or damaged American military facilities in Iraq, including the military's largest dining hall in the country, documents obtained by The New York Times show. Two soldiers died in an electrical fire at their base near Tikrit in 2006, the records note, while another was injured while jumping from a burning guard tower in May 2007.

Current Actions Impacting Contingency Basing

OSD / Joint Staff Initiatives:

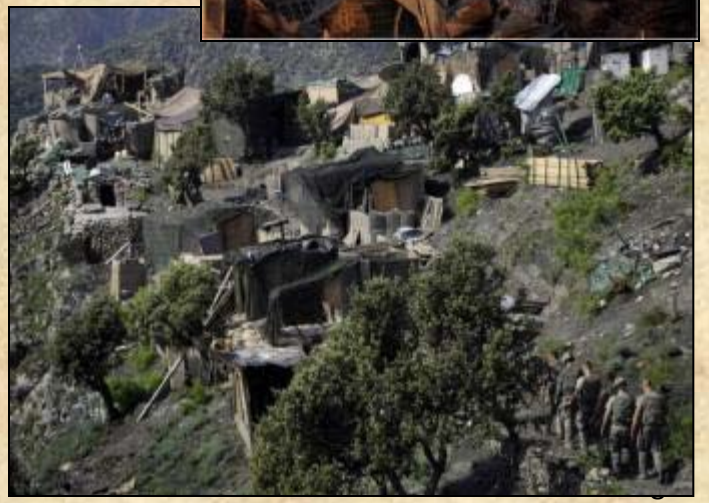
- J4 Operational Logistics Efficiencies
- Joint Expeditionary Camp Operations Sustainability Workshop, 11-12 May 10
- Joint Expeditionary Basing Working Group (JEBWG)
- Joint Engineer Planning and Execution System (JEPES)
- Contingency UFC Work Group
- Joint Contingency Base CBA
- JOEB Joint Contingency Construction Standards & Standard Designs
- Force Sufficiency Assessment GOSC on Base Engineering

Army Actions / Initiatives:

- **AAA Report** Recommendations (Army Strategy for Establishing & Sustaining NTIs)
- Base Camp ICDT / CBA
- **Contingency Basing Community of Practice (CoP)**
- **ACP: Major Objective 2-10** "Institutionalize Contingency Basing"
- Integrated Unit, Base and Installation Protection (IUIBP) ICDT
- Army Energy Security Implementation Strategy (Army Senior Energy & Sustainment Council)
- SAGE (Smart Grid)

Systemic Base Camp Challenges

- Consume vast amounts of resources
- Generate vast quantities of liquid & solid waste
- Challenging to protect from attacks
- Too much manpower to establish and shut down
  - Ability to “lift & shift” is severely limited
- Combat power diverted from COIN tasks to convoy/base security, base ops & maintenance
- Lack of standardization, robustness, systems architectures, interoperability & scalability
- Total life cycle costs are prohibitive



Engineers in OEF

• US Army Engineer School and Center for Army Lessons Learned (CALL) Collection and Analysis Team (CAAT)

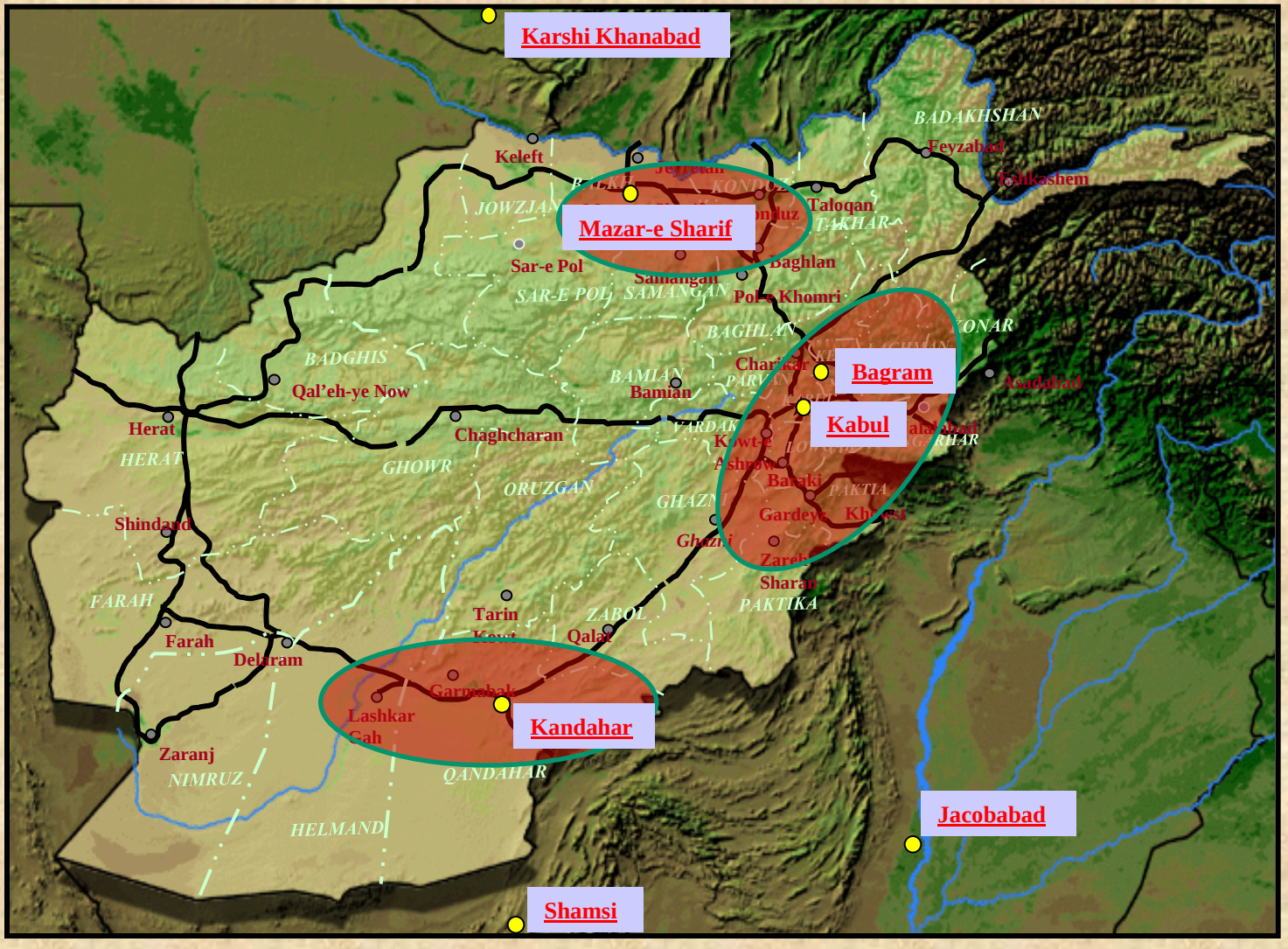
2010 Collection Plan

- Engineer Support for Stability Operations
- Command & Control
- Mobility Operations
- Base Camps
- Engineer Officers/NCOs in Stability Operations

2010 Collection Plan - 4.0 Base Camps

4.1 Planning, Design, and Scalability	4.2 Construction and Maintenance	4.3 Operations and Mgmt	4.4 Environmental and Sustainability	4.5 Special Considerations	4.6 Closures and Transfers
A. Operational effectiveness	A. Funding process	A. Base camp defense	A. Environmental Expertise (officer, NCO)	A. Significant considerations	A. Site Survey/ Inventory req
B. Master planning	B. DD 1390/91 maintenance	B. Fire Fighters	B. EBS/OESHSA/Site Survey's	B. DIV/ Corps related planning	B. Real Estate actions
C. Construction forums	C. Construction QA	C. UFC used at Base Camps	C. Green Warrior Follow-up	C. Geospatial products	C. Document req
D. Environmental forums	D. Envir. QA	D. Geospatial products	D. Integrated Waste Management (Recycling / Reuse / HAZMAT)	D. Weatherization (e.g. Winterization)	D. Data Mgmt/ Archiving
E. Construction standards		E. Survivability	E. Solid & Liquid Waste Mgmt / Practices	E. Movement-Forward Post to Base Camps	
F. Geospatial integration			F. Power and Energy	F. Snow & Ice Clearance Removal	
G. Base Camp Constr. Requirements			G. Sources of drinking water (drilling, bottling)	G. Surge/TOA support	
H. Geospatial integration with FOB			H. LOGCAP mgmt transitions, coordination, uses	H. MILCON/Project Funding mechanisms	
I. Issues w/ real estate			I. Marketing Opportunities		

Afghanistan areas visited



Planning and Design

Terminology

Master Planning

Site Selection

Design Support

Standards

Capabilities

Project Approval Processes

Real Estate

Resourcing

Construction

Methods

Resourcing

Execution

Standards

Materials

LOGCAP

Techniques

MILCON

Operations and Management

Responsibilities

Training

Public Works Engineers

Roles

C2 Structure

Maintenance

Facility Ops

Integrate & Manage Contractors

Proponency

CORs

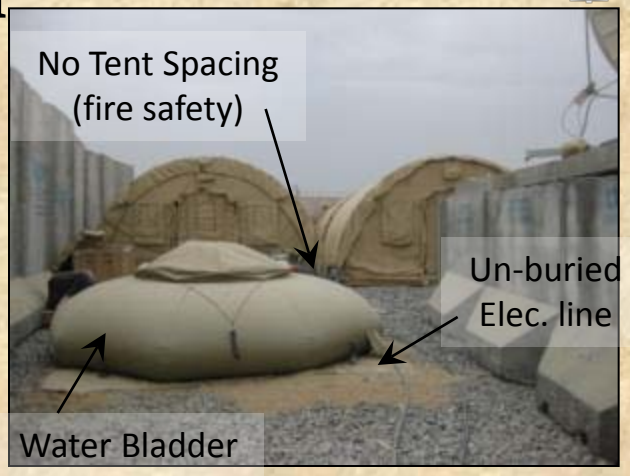
QA/QC

Special Considerations/ Weatherization

Winterization

Terminology

Lessons Learned



Requirements Generation

Risks

After Action Reviews

LOGCAP

Preventive Maintenance

Environmental and Sustainability

Integrated Waste Management

Simple Conservation

Environmental Documentation

Spot Generation

Contracted SME

Waste Water Mgmt

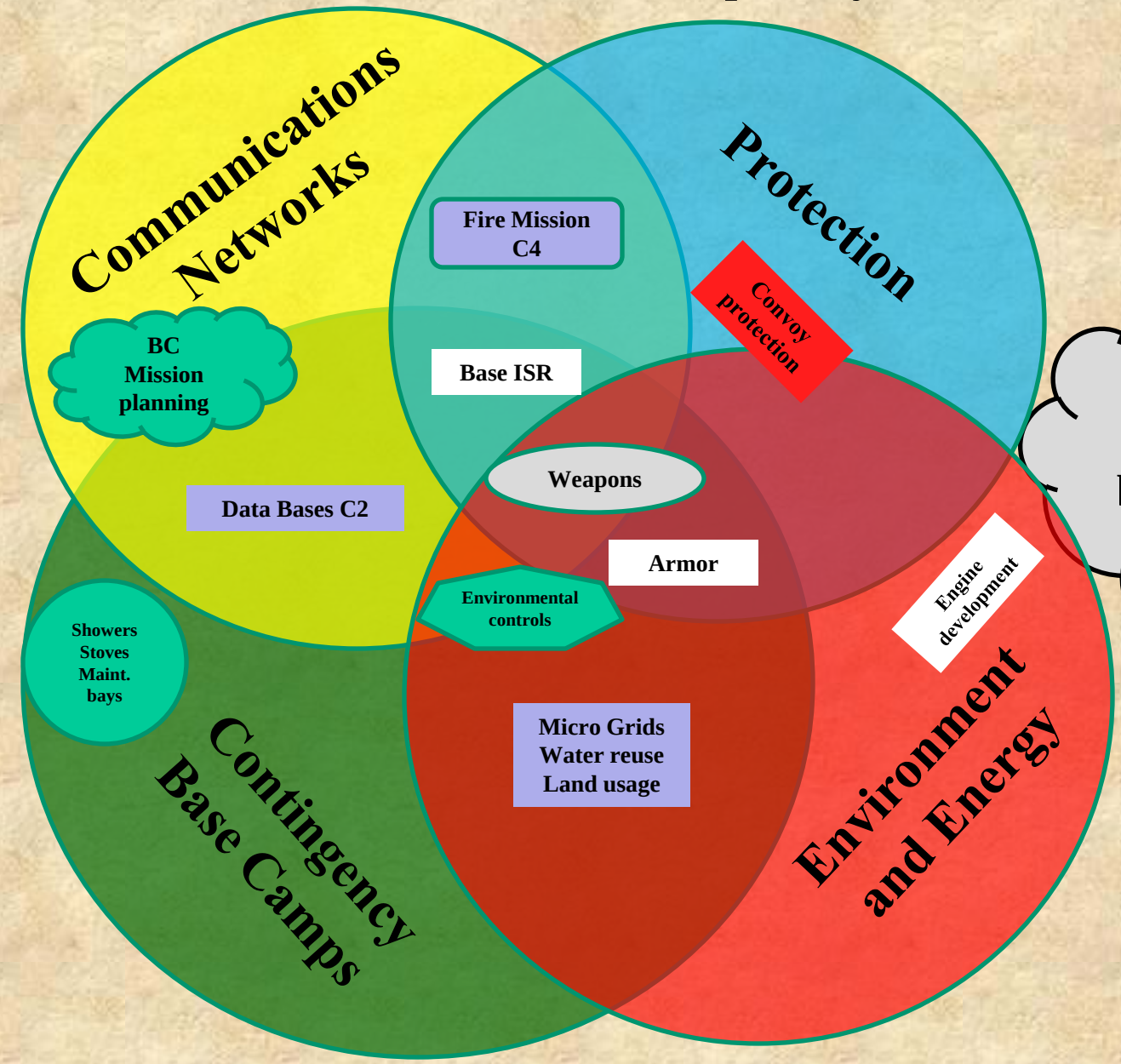
Vietnam Era Bases

ERDC CERL/USAES Environmental Considerations & Sustainability Study

- Currently in final draft stages.
- It has recognized that there are DOTMLPF-P related gaps that must address
  - Power generation and distribution
  - Water generation and distribution
  - Waste management
  - Environmental controls, and management systems
  - ESOH issues
  - Planning and design shortfalls
- Ability to solve these gaps is directly related to the importance of the descriptors
  - Scalable
  - Adaptable
  - Affordable
  - Modular
  - …..

Overlapping Army Initiatives

Areas of Interface that require Synchronization



Each of these interfaces must be identified and specifically managed

Base Camp CBA Milestones

Expected Outcome:
Initial Requirements Documents
ICD (T) 3rd Qtr FY11
Initiate DICRs (3rd 4th Qtrs FY11)

FSA Approval (T) Feb/Mar 2011

We are Here

FSA to ARCIC - 27 Jan 2011

FSA Endorsed by ICDT Chair 26 Jan 2011

FNA Approved 29 Nov 2010

FSA Executive Agent Review – 23 Nov 2010

FSA Completed O-6 Review – 27 Sep 2010

Revised FNA to ARCIC
2 Sep 2010

Dir ARCIC Guidance to relook
FNA risk criteria
Ref. VTC w/MSCoE 25 Aug 2010

Note: Mature solutions identified from the CBA will be considered for ACD or immediate development as a "spin off"

FNA to ARCIC 24 May 2010
for validation and approval

FNA Endorsed by Executive Agent – 21 Apr 2010

FAA Approved - 22 Mar 2010

FSA

FAA Endorsed by Executive Agent – 12 Nov 2009

FNA

FAA

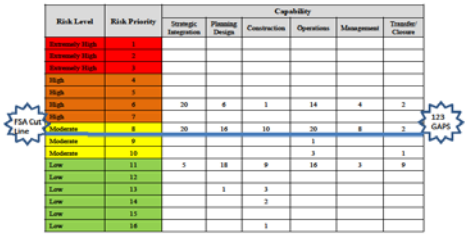
CBA Kickoff – Jul 2009

Results: <u>Proceeded to FSA with top 123 Gaps</u>

Evaluated existing and programmed capabilities against FAA T/C/S

Identify gaps (<u>195 total gaps</u>)

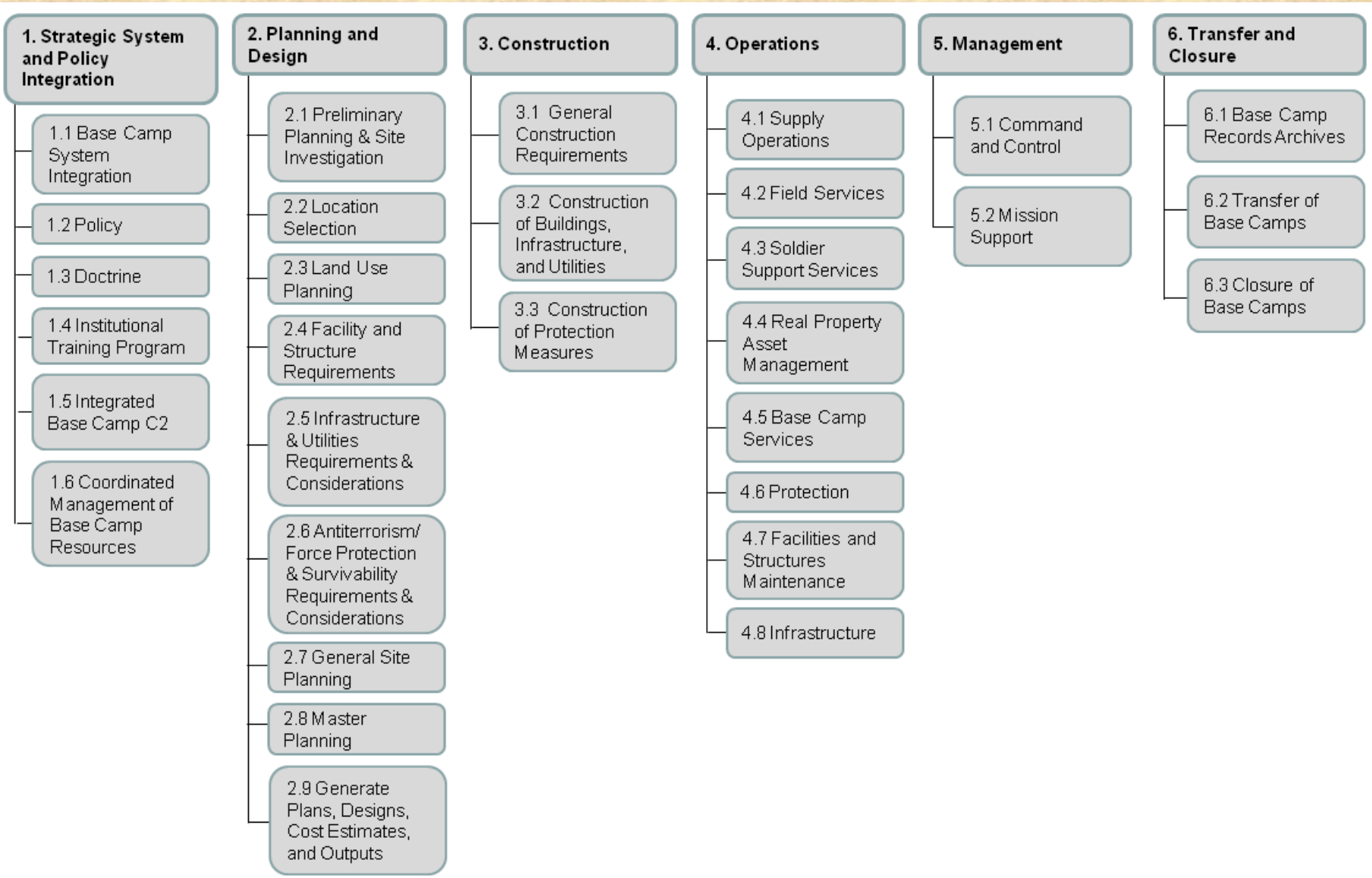
- **Analyze the risks associated with gaps**
- **Prioritize the gaps**



<u>6 Required Capabilities (254 enabling tasks)</u>

RC 1 - Strategic System & Policy Integration
RC 2 – Planning & Design
RC 3 – Construction
RC 4 – Operations
RC 5 – Management
RC 6 – Transfer & Closure

Base Camp Capabilities Hierarchy



Prioritized Tasks & Gaps Summary by RC

RC 1 - Strategic System & Policy Integration Tasks & Gaps Summary

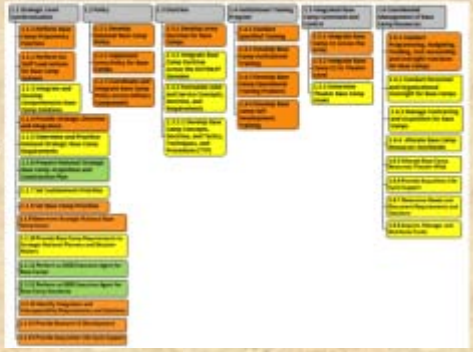
The future force requires the capability to integrate base camp efforts at the national and strategic levels as a holistic system to provide consistent policy and doctrine, comprehensive training, integrated command and control (C2), and coordinated resource support of base camps in contingency operations.

RC 1 had the most high-risk gaps

20 High Risk and 20 Moderate Risk gaps mostly attributed to:

- no designated leads (recently resolved)
- inadequate policy and doctrine.

These gaps are considered the root cause for many of the gaps throughout this CBA.



Risk Level
Moderate High
High
Moderate
Low

RC 3 - Construction Tasks & Gaps Summary

The future force requires the capability to construct base camps during contingency operations in JIIM environments to provide a base of operations capable of supporting the full spectrum of operations.

RC 3 had the second least high-risk gaps

1 High Risk and 10 Moderate Risk Gaps are primarily linked to:

-Inadequate doctrine, plan and materiel to support modular/ scalable construction

- inefficient utilities and for protection

- insufficient organizational structure to support QA/QC and on site COR/COTR.

Risk Level
Moderate High
High
Moderate
Low

RC 5 - Management Tasks & Gaps Summary

The future force requires the capability to manage base camps during contingency operations in JIIM environments to enable operational commanders and staffs to focus on operational missions with increased flexibility and fewer distractions.

RC 5 had the fourth most high-risk gaps; however, proportionately has a high-risk gap to task ratio equal to RC 1 – Strategic System & Policy Integration (most high-risk gaps)

4 High Risk and 8 Moderate Risk Gaps are primarily linked to:

- Inadequate doctrine
- Inadequate organizational structure
- Inadequate training

Risk Level
Moderate High
High
Moderate
Low

RC 2 - Planning & Design Tasks & Gaps Summary

The future force requires the capability to plan and design base camps during contingency operations in JIIM environments to provide a base of operations across the full spectrum of operations.

RC 2 had the third most high-risk gaps

6 High Risk and 16 Moderate Risk Gaps are primarily linked to:

- multiple solutions for the joint force (Lack of standardization)
- addressing components of a base camp as individual systems

Risk Level
Moderate High
High
Moderate
Low

RC 4 - Operations Tasks & Gaps Summary

The future force requires the capability to operate base camps during contingency operations in JIIM environments to provide a base of operations across the full spectrum of operations.

RC 4 had the second most high-risk gaps.

14 High Risk and 20 Moderate Risk Gaps indicates:

- complexity of the problem
- a large number of functional gaps across multiple organizations

Risk Level
Moderate High
High
Moderate
Low

RC 6 - Transfer and Closure Tasks & Gaps Summary

The future force requires the capabilities to transfer or close base camps to protect U.S. interests and promote good relations during contingency operations in JIIM environments.

RC 6 had the least high-risk gaps

2 High Risk and 2 Moderate Risk Gaps are primarily linked to:

- Inadequate policy and doctrine.

Risk Level
Moderate High
High
Moderate
Low

EC & Sustainability Tasks by RC

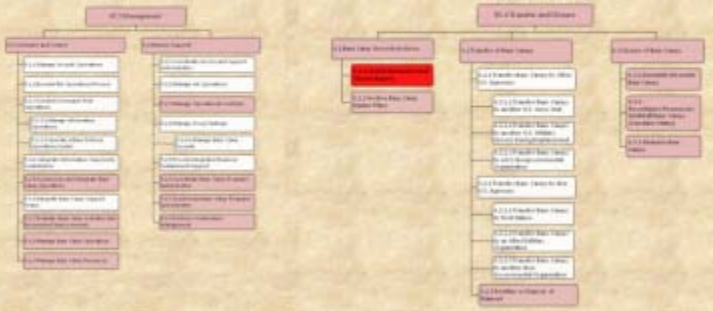
RC 1- EC & Sustainability Tasks

RC 2 - EC & Sustainability Tasks RC

RC 3 - EC & Sustainability Tasks RC

RC 4 - EC & Sustainability Tasks RC

RCs 5 & 6 - EC & Sustainability Tasks



81 related tasks
24 direct tasks

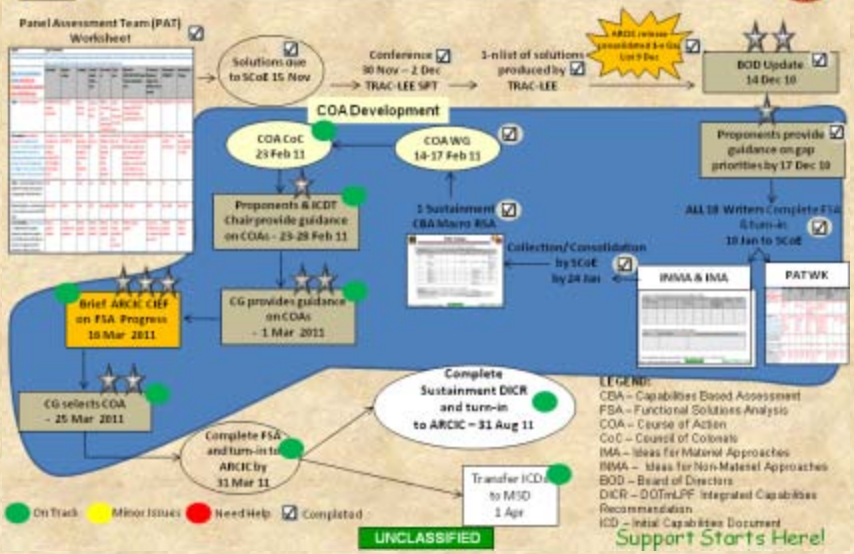
Base Camp CBA Summary

37 Gaps related to Environmental Considerations and Sustainability with over potential 400 Solutions: presented for adoption or further study

- **Integrated Waste Management--Sanitation, waste collection, and treatment systems**
- **Master planning/design and Real Estate – land use, EBS, abandon, dismantle, and demolish base camps**
- **Utilities – power generation and distribution systems, physical plants, utility infrastructure**
- **Water (potable and non- potable) production, distribution and management**
- **ESOH and hygiene support services (such as fire prevention and response or spill control)**
- **Maintain water (potable and non- potable) production and distribution**
- **Conduct geospatial engineering operations and functions**
- **Construction materials management and reuse – modular, scalable, sustainable**
- **Integrated pest management and vector control support.**
- **Force health protection**

Sustainment CBA Summary

Functional Solutions Analysis Process Map



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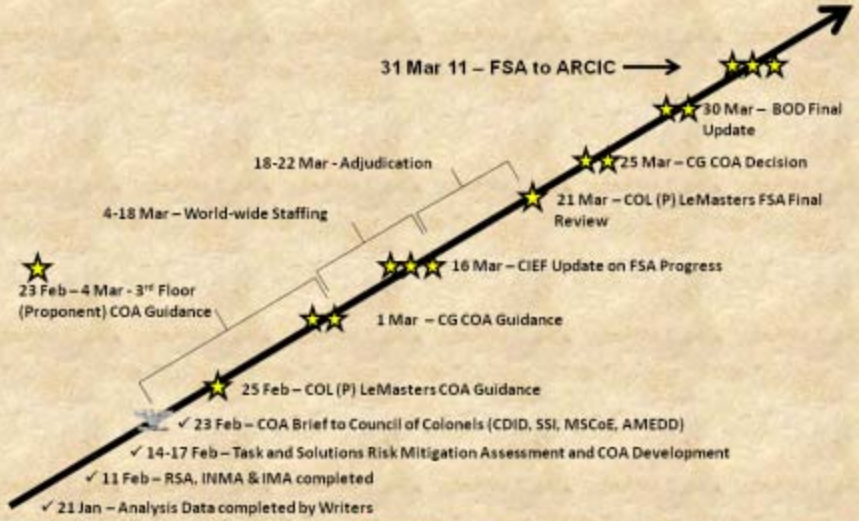
Support Starts Here!

Timeline



25 FEB 11, Lt Col Wilkes, PH: 734-0006

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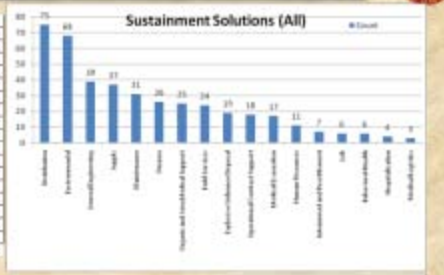
Support Starts Here!

Complete Solution Set

- Assessment based on AUTL FM 7-15, Feb 2009
- 83 Gaps in 17 functional areas brought into FSA
  - No gaps forwarded to ARCIC for Dental, Legal Services, Religious Support, and Band
- Levels of Risk
  - 7 Extremely High
  - 42 High
  - 34 Moderate
- 416 Solutions identified across the 83 Gaps
- Estimated cost to implement all solutions
  - $20 Billion
- 37 Gaps Approved by ARCIC for Full FSA



Risk Level To Mitigate	Solutions
Extremely High	58
High	226
Moderate	132

DOTMLPF		
Domain	Solutions	Estimated Cost
M	76	$ 11,249,904,176.47
T	55	$ 270,406,904.33
O	53	$ 1,867,952,634.86
P	28	$ 186,525,139.03
AP	17	$ 795,295,807.22
AC	9	$ 1,277,947,844.40
F	7	$ 400,834,260.24
	416	$ 20,022,138,089.55

Estimated Cost = $20 Billion

Mitigates 83 Gaps

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Support Starts Here!

Course of Action (COA) & Descriptions

- COA 1. High Payoff Solutions
  - Implement those solutions which meet at least two of the criteria of Cost, Risk & Time.
  - Focus – Identify those solutions which reduce risk at the least cost within the period of the POM.
- COA 2. Army Sustainment Universal Tasks
  - Improve the overall assessed capability across high priority sustainment AUTL tasks.
  - Focus – Identify those solutions which enhance both proficiency and sufficiency across AUTL tasks within the period of the POM.
- COA 3. Reduce Risk
  - Mitigate the 49 gaps which the Sustainment ICDT identified as Extremely High & High in our analysis.
  - Focus – Identify those solutions which will reduce the gap risk within the period of the POM.
- COA 4. Sustainment WIF Assessment Gaps
  - Mitigate those gaps at Theater, Corps, Division and Brigade as briefed to CSA in the Baseline Assessment.
  - Focus – Identify those solutions which enhance sustainment support to the four echelons within the period of the POM.
- COA 5. ARCIC Sustainment Gap Priorities
  - Mitigate the 37 Sustainment gaps identified by ARCIC as being within the Top 105 gaps across all WIFs.
  - Focus – Identify those solutions which address ARCIC's priority gaps within the POM.

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Support Starts Here!

EC-RCs from Sustainment CBA

Chapter 4 (Other Services) Annex B

7 Gaps related to Environmental Considerations and Sustainability with 69 Solutions: 1 Gap and 14 Solutions presented for adoption or further study

- **Assess/predict effects of environmental conditions when conducting FSO.**
- **Provide environmental support when conducting full spectrum operations.**
- **Provide waste management when conducting full spectrum operations.**
- **Provide environmental clean up when conducting full spectrum operations.**
- **Provide environmental engineering reconnaissance/survey when conducting full spectrum operations.**

•Provide engineering in order to assure mobility, enhance protection, enable expeditionary logistics, build capacity, and minimize environmental impacts.†

•Plan design, construct, operate, transfer and close base camps in a joint, international and multinational environment to provide safe, secure, and largely self-sustaining base camps to support full spectrum operations. †

†Did not make cut after risk assessment, so were not brought forward.

DOTMLPF Analysis Solution Summary

D

- Revise doctrine for large scale clean up operations to include sampling requirements and procedures.
- Update doctrine on battlefield assessment/prediction of effects of environmental conditions.
- Develop doctrine for base camps, to include incorporation of EBS information into planning. responsibilities for archiving and maintaining EBS data.
- Provide doctrine requiring sustainability in base camp operations, to include energy, water, and waste management to maximizes effectiveness and efficiencies.
- Develop doctrine to support base closure.
- Update doctrine on the identification, segregation, re-use, reclamation, recycling, or proper disposal of wastes.

O

- Increase Engineer Facilities Detachments (EFDs) to 1 per base camps with 5000 people or more.
- Increase Forward Engineer Support Teams (FEST)-As and FESTs-Main.
- Assign environmental engineers to 1 per BN.
- Provide waste management SME support for development of performance work statements/scopes.
- Develop WG/board for integration of logistics, engineering, environmental, safety, and health issues.
- Create deployable teams to provide SME support for waste management practices.
- Develop SME support to oversee conservation and reuse (integrated into brigade and battalion staffs).

T

- Develop Army awareness training on waste mgnt and train all Soldiers in unit-level waste management.
- Train Environmental SMEs. (Either through MOS, branch, ASI, or specialized ad hoc team).
- Develop training for tactical expertise on ESOH inspections, hazardous waste, and prevention measures.
- Train Soldiers in environmental sampling procedures.

DOTMLPF Analysis Solution Summary

m
M

- Increase quantity of waste management equipment sets.
- Develop SKOs for the engineers or base camp mayor cells to include waste management equipment such as waste incinerators.
- Develop Environmental Sampling Kits SKOs. Adapt ENFIRE or FIRESTORM or IKE to include environmental data collection.
- Modify existing laboratory capability for environmental sample analysis.
- Develop IT for tracking, storing, archiving, and accessing environmental data.
- Continue evolutionary development of set kits and outfits for conducting EBS.
- Develop automated system linking EBS and OEHSA platforms, archives results, and populates reports.
- Improve the databases of existing environmental assessments and data (improve structure, make user-friendly and accessible).
- Develop component parts and systems (that reflect the relationship to holistic utility systems) for power, water, waste, and force protection and virtual base camp simulation and modeling capability.
- Develop a tactical microgrid system with alternative energy systems at appropriate scales.
- Continue evolutionary development of systems to generate purified water.
- Develop tactical utility systems that maximize sustainability, such as grey- water/ black- water recycling, waste-to-energy, water from alt. sources, alt. energy systems, and improved habitation systems.
- Increase authorized ESOH equipment available to base camp TOE sets, kits, and outfits, such as secondary containment systems, air cascade systems, fire fighting, HAZMAT response equipment, and personal-protective equipment.
- Develop low-cost, small footprint materiel systems for water production and recycling.
- Continue spiral development of systems for monitoring waste streams and systems for efficient waste management and recycling.

DOTMLPF Analysis Solution Summary

L

- **Incorporate appropriate training (such as ESOH, HAZMAT, spill control, and fire prevention) into leader development courses at all levels including assessment/prediction of environmental conditions as part of their mission planning requirements.**
- **Educate leaders on waste management requirements and the need for efficient and effective waste systems through integrated planning for life cycle waste management in operations.**
- **Emphasize to leaders the importance of including environmental reconnaissance/survey in early planning stages.**
- **Emphasize to leaders the importance of conducting Environmental Baseline Surveys (EBS) prior to occupying an area.**
- **Place command emphasis on waste management in TO and base camp operations.**
- **Develop performance measures for the reutilization, recycling, or disposal of accumulated waste and material.**

P

- **Expand pool of SMEs, develop and track an ASI or secondary MOS for environmental engineers.**
- **Develop EPA-lab-qualified personnel to conduct lab analysis needed for environmental sample processing.**

F

- **Provide training facilities that includes existing buildings, open areas, ranges, etc. for assessment/ prediction of environmental effects, construction impacts for operation and construction practices.**
- **Establish a mock base camp training site where base camp elements may be constructed (as well as existing facilities that may be modified or evaluated for suitability of use.**

DOTMLPF Analysis Solution Summary

AP

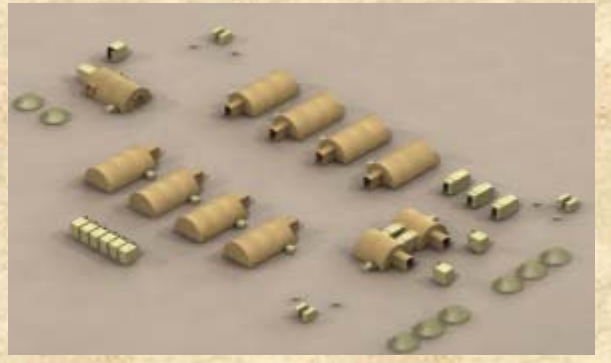
- **Revise/update Army policy on waste management to be more specific and to standardize waste management in-theater to reduce waste streams and supporting costs and resource requirements.**
- **Develop Army policy regarding tracking, storage, archiving, and documentation of environmental data.**
- **Develop policy to incorporate sustainability into the planning, design, and construction operations and the management of contingency base camps.**
- **Make base camps a program of record and appoint and resource a proponent.**
- **Develop policies for triggers for base camp levels of capability (basic, expanded, and enhanced) such as habitation tents to portable rigid walls to fixed structures.**
- **Standardize policies and procedures for base camp closure, establishing Army policy for the retrograde and disposal of base camp materials.**
- **Develop policies and procedures for OCO waste management.**


From the Past
Through Current Conditions
To Future Conditions
MODULAR
SUSTAINABLE
SCALABLE
SOLUTIONS

An Opportunity for a More Sustainable Army?

Generate water on site

Power -- efficient heating & cooling systems (~70% of demand)



Water reuse -- Gray & black water recycling

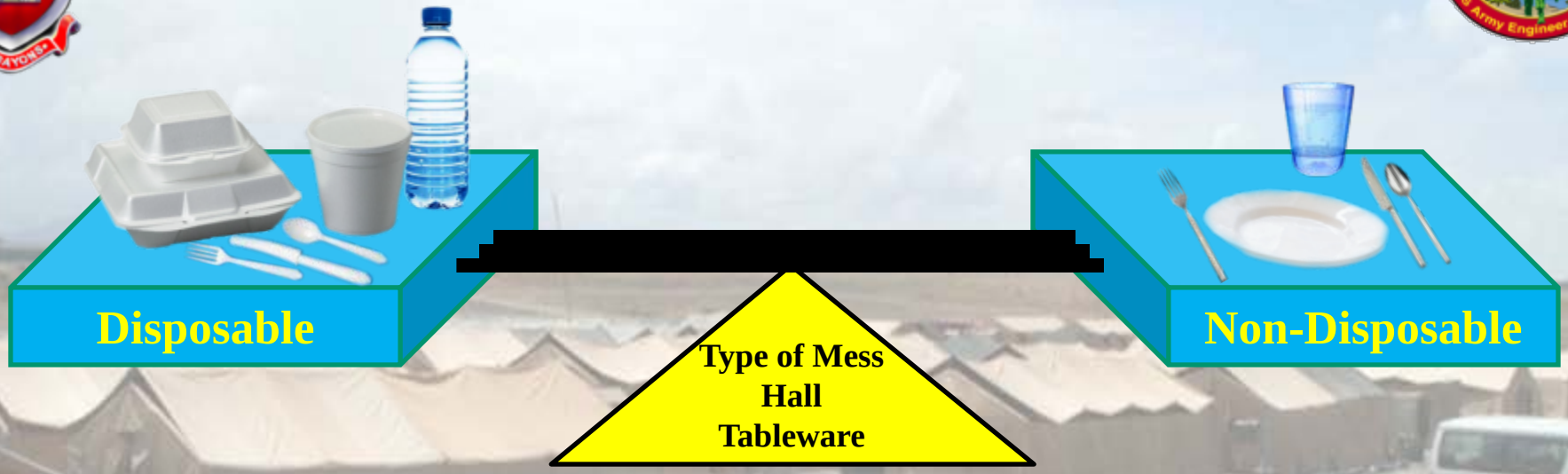
Renewable energy sources

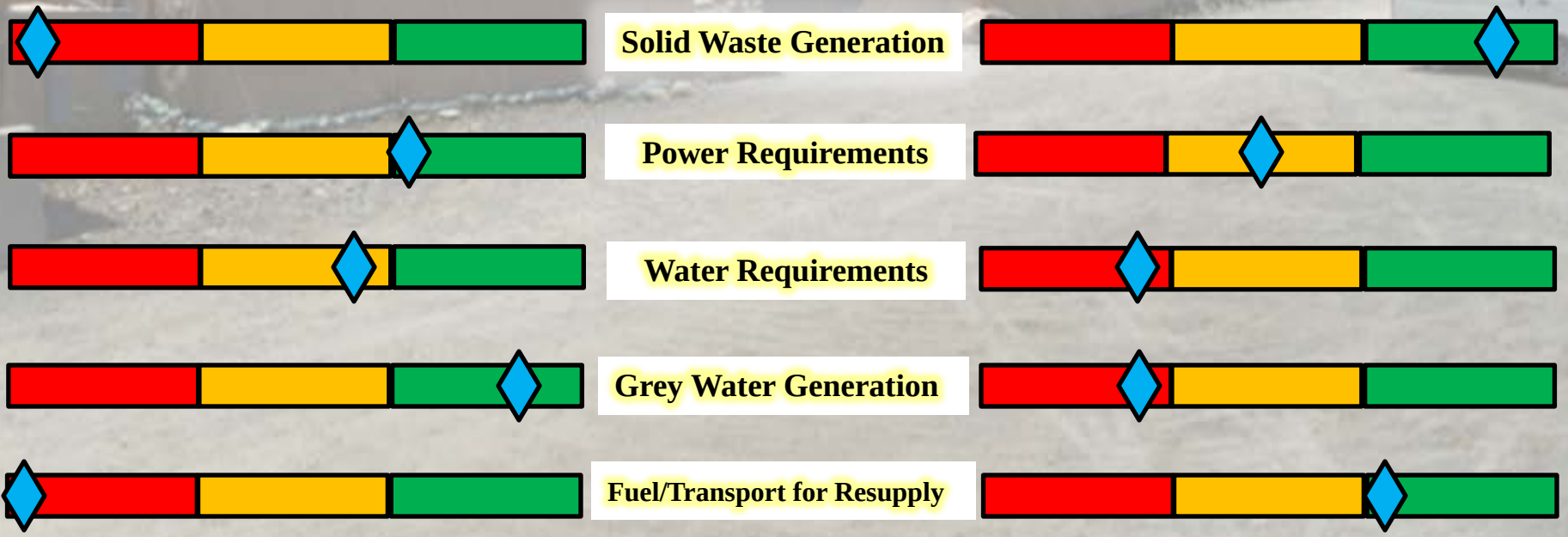
Power -- efficient functional systems (~30% of demand)

Waste to energy conversion

Smart power grid management

Impacts of Decision-Making






Questions?
OREGON
MEXICO
PENN STATE
ATLANTA

BACKUP

What's Been Going On

1. **Assign Army Secretariat and ARSTAF Proponents**
   USA Policy Memorandum 6 May 2010
2. **Draft Army Strategy for Contingency Bases by end of 2nd Quarter FY-11.**
   Under review by Council of Colonels
3. **Develop Army Stakeholder Roles and Responsibilities.**
   Under review by Council of Colonels
4. **Codify Contingency Basing Community of Practice.**
   Draft Charter under review
5. **Identification of Policy/Doctrine Gaps by end of 2nd Quarter FY-11.**
   TRADOC CBA (FSA) ready for signature
6. **Publish Army Policy for Contingency Basing**
   Completed O-6 formal ARSTAF review
7. **Develop a synchronized way ahead for future efforts that Leverage Army and Joint efforts.**
   Draft Campaign Plan by 3rd Quarter FY-11
   Scope Joint CBA in 2nd Quarter FY-11
   Army Campaign Plan Mission Objective 2-10

8. **Update and publish AR 415-16 Army Facilities Components System (AFCS).**
   First Quarter FY-12
9. **Establish Joint Contingency Construction Standards and Standard Designs.**
10. **Improve delivery of services.**
    NDIA Draft Industrial Committee Charter

Planning and Design

- Site Selection
- Real Estate
- Master Planning
- Standards
- Terminology
- Design Support
- Capabilities
- Project Approval Processes
- Resourcing

Construction

- **Resourcing**
  - **Troop Labor, LN Contract, LOGCAP, MILCON**
- **Execution**
  - **Site Adaptable Standardized Designs**
  - **Work Classification Issues For Real Property And Personal Property.**
  - **Disconnect Between Afghan First and LOGCAP Acceptance**
  - **Need to mentor, teach and prepare LN contractors**
  - **Tendency to overload good LN contractors**
- **Materials**
  - **Long Supply Lines And Long Lead Times For Construction Materials.**
  - **No Established Class IV Yard(s) With Common Construction Items**
- **Techniques/Methods**
  - **Lack Of Understanding 2nd And 3rd Order Effects (Drainage Plans)**
  - **Investigate Emerging And Innovative Technologies**
  - **Purchase New Technologies For Greater Efficiencies.**

Operations and Management

- Centralized Proponent
- Establish Roles and Responsibilities.
- Establish Structure for C2
- Designated base camp engineers for public work functions
- Dedicated CORs and staff to oversee maintenance/facility ops.
- Baseline processes and operations.
- Effectively integrate and manage contractor resources.
- Understanding resourcing decisions are needed.
- Contractors should not provide QA/QC services.
- No available materials or specialized training.
- No standardized means to assist follow on units
- Military Engineers can support many aspects.
- Contracting can be a viable means to execute services.

Special Considerations/ Weatherization

- Consistent terminology
- Requirements generation and contracting.
- Propagate and institutionalize lessons learned.
- Conduct After Action Reviews on contracting processes.
- complex process of accepting facilities for LOGCAP
- Many safe facilities do not meet current standards for LOGCAP.
- Rework required and additional expense incurred.
- Recent modifications to the current LOGCAP
- Winterization and other preventive maintenance need to occur well in advance of inclement weather.
- Execution of winterization and other preventive maintenance should be incorporated into the LOGCAP contracts.
- Ensure that commanders understand associated risks with engineering/ planning/siting decisions. (such as for tent spacing and location).

Environmental and Sustainability

- Environmental Documentation
- Contracted Environmental SME
- impacts on prolonged mission accomplishments and risks
- Need for Integrated Waste Management Planning
- Need to Implement simple conservation methods.
- Waste Water Management should move toward more sustainable practices.
- Reduce spot generation by installing Mini Grids.
- Larger base camps should transition to more efficient turbine power plants.
- LOGCAP Is maintaining most power generation.
- No incentive for the contractor to find efficiencies,
  save money and reduce the need for fuel.

BC ICDT CBA SLIDES

Functional Area Analysis Summary

6 Required Capabilities (254 enabling tasks)

RC 1 - Strategic System & Policy Integration
RC 2 – Planning & Design
RC 3 – Construction
RC 4 – Operations
RC 5 – Management
RC 6 – Transfer & Closure

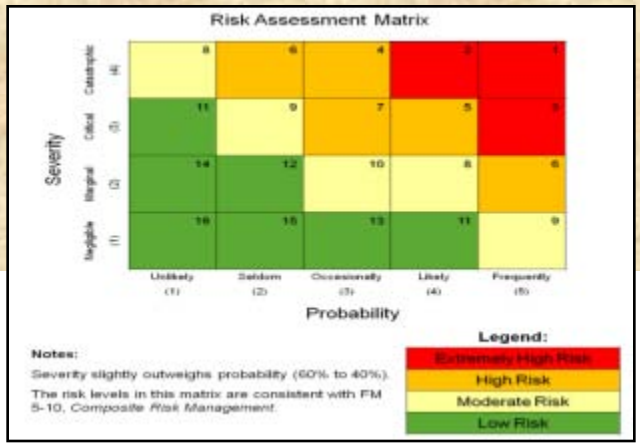
9 Vignettes

Vignette	Size	Duration
V1	Small	Short
V2	Small	Mid-Term
V3	Small	Long
V4	Medium	Short
V5	Medium	Mid-Term
V6	Medium	Long
V7	Large	Short
V8	Large	Mid-Term
V9	Large	Long

Size
Small: 100-600
Medium: 600-6000
Large: greater than 6000

Duration
Short: Minimum 60 days
Mid-Term: Minimum 180 days
Long: Sustained Operations (undetermined end-state)

Functional Needs Analysis Summary



Evaluated existing and programmed capabilities against FAA T/C/S to

- Identify gaps **(195 total gaps)**
- Analyze the risks associated with gaps
- Prioritize the gaps

Risk Level	Risk Priority	Capability					
		Strategic Integration	Planning Design	Construction	Operations	Management	Transfer/ Closure
Extremely High	1						
Extremely High	2						
Extremely High	3						
High	4						
High	5						
High	6	20	6	1	14	4	2
High	7						
Moderate	8	20	16	10	20	8	2
Moderate	9				1		
Moderate	10				3		1
Low	11	5	18	9	16	3	9
Low	12						
Low	13		1	3			
Low	14			2			
Low	15						
Low	16			1			

FSA Cut Line

123 GAPS

Results:

Proceed to FSA with top 123 Gaps

RC 1 - Strategic System & Policy Integration
Tasks & Gaps Summary

The future force requires the capability to integrate base camp efforts at the national and strategic levels as a holistic system to provide consistent policy and doctrine, comprehensive training, integrated command and control (C2), and coordinated resource support of base camps in contingency operations.

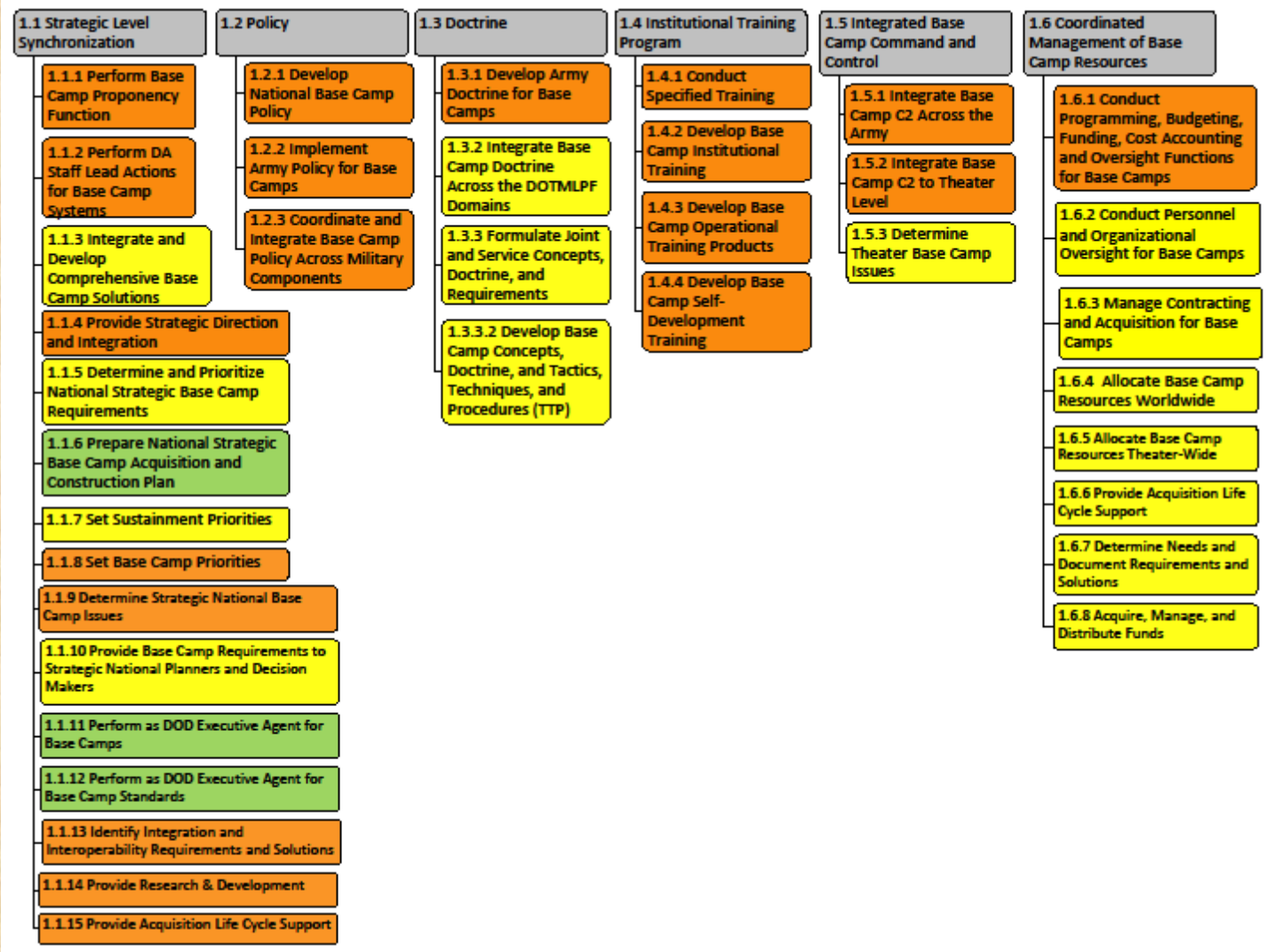
RC 1 had the most high-risk gaps

20 High Risk and 20 Moderate Risk gaps mostly attributed to:

- no designated leads (recently resolved)

- inadequate policy and doctrine.

<u>These gaps are considered the root cause for many of the gaps throughout this CBA.</u>



Risk Level
Extremely High
High
Moderate
Low

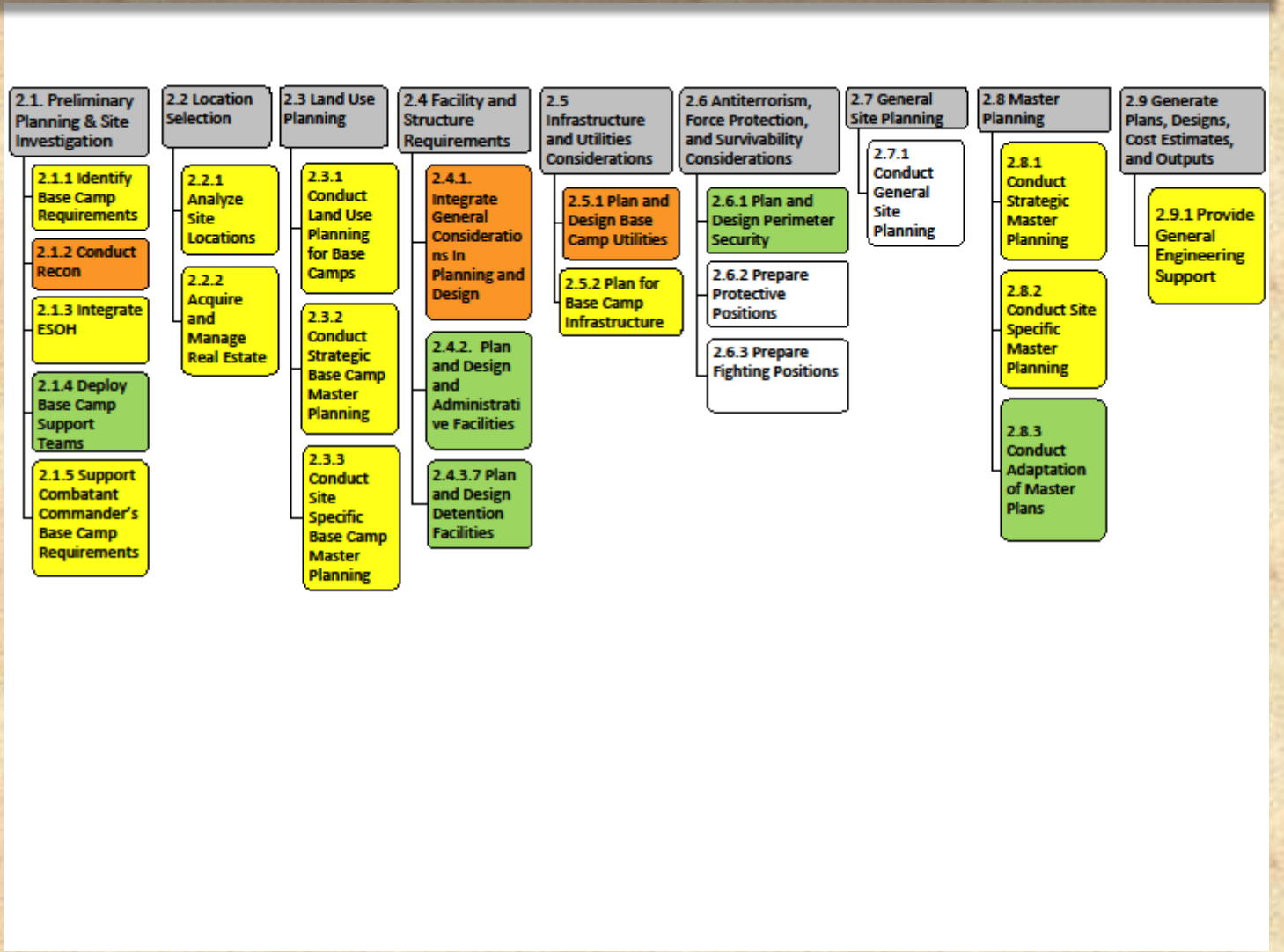
RC 2 - Planning & Design
Tasks & Gaps Summary

RC 2 had the third most high-risk gaps

6 High Risk and 16 Moderate Risk Gaps are primarily linked to:

- multiple solutions for the joint force (Lack of standardization)

- addressing components of a base camp as individual systems



Risk Level
Extremely High
High
Moderate
Low

RC 3 - Construction
Tasks & Gaps Summary

The future force requires the capability to construct base camps during contingency operations in JIIM environments to provide a base of operations capable of supporting the full spectrum of operations.

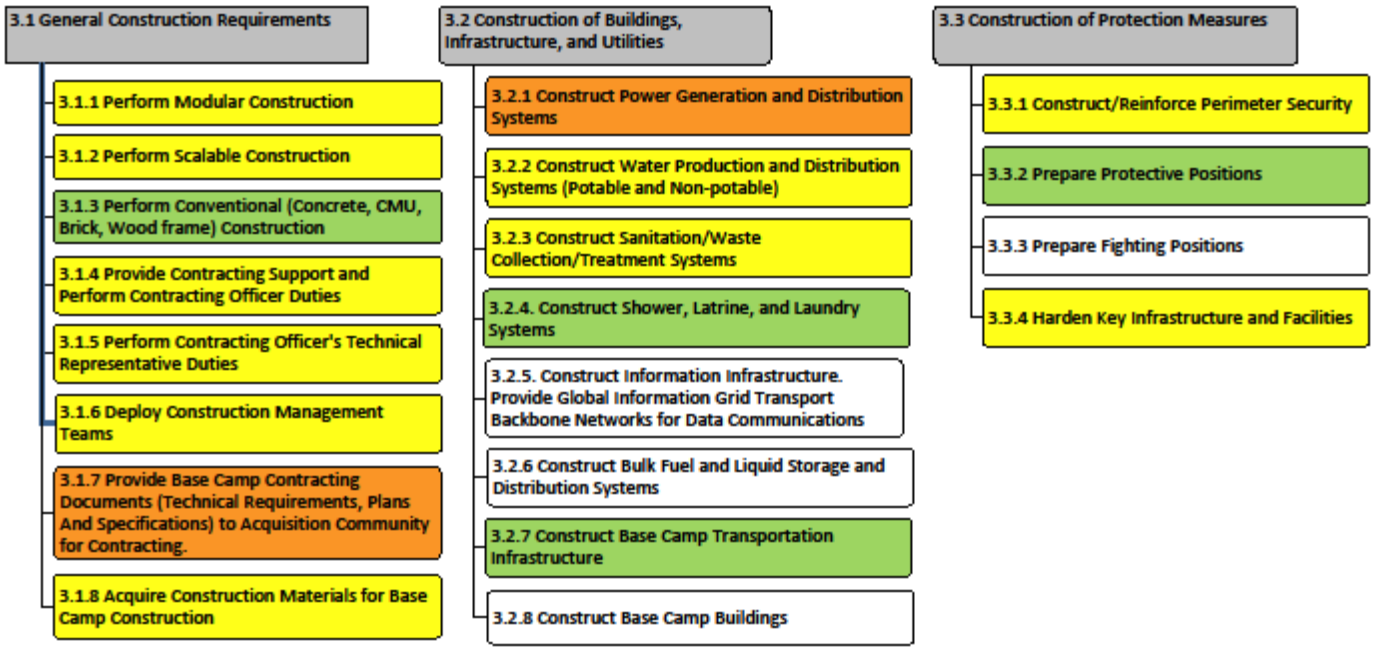
RC 3 had the second least high-risk gaps

1 High Risk and 10 Moderate Risk Gaps are primarily linked to:

-inadequate doctrine, plans and materiel to support modular/ scalable construction

- inefficient utilities and forc protection

- insufficient organizational structure to support QA/QC and on site COR/COTR.



Risk Level
Extremely High
High
Moderate
Low

RC 4 - Operations
Tasks & Gaps Summary

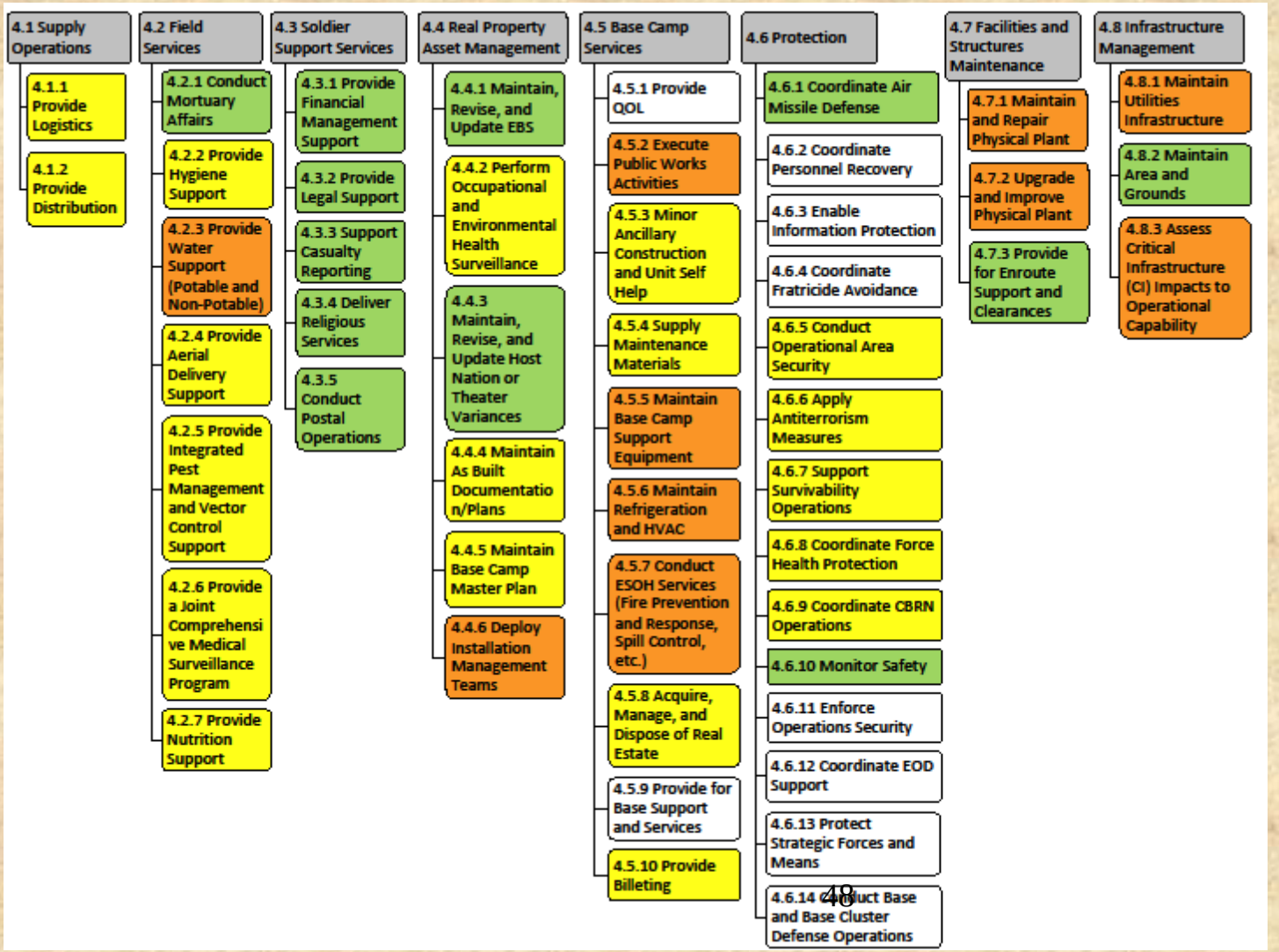
The future force requires the capability to operate base camps during contingency operations in JIIM environments to provide a base of operations across the full spectrum of operations.

RC 4 had the second most high-risk gaps.

14 High Risk and 20 Moderate Risk Gaps indicates:

- complexity of the problem

- a large number of functional gaps across multiple organizations



Risk Level
Extremely High
High
Moderate
Low

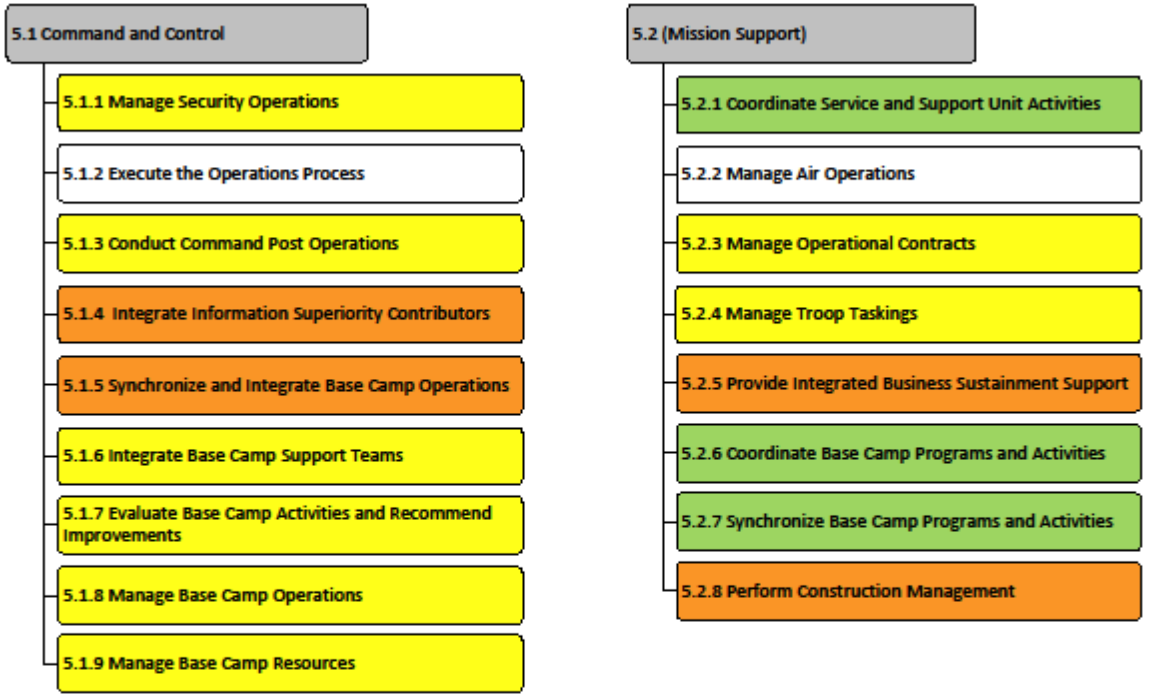
RC 5 - Management
Tasks & Gaps Summary

The future force requires the capability to manage base camps during contingency operations in JIIM environments to enable operational commanders and staffs to focus on operational missions with increased flexibility and fewer distractions.

RC 5 had the fourth most high-risk gaps; however, proportionately has a high-risk gap to task ratio equal to RC 1 – Strategic System & Policy Integration (most high-risk gaps)

4 High Risk and 8 Moderate Risk Gaps are primarily linked to:

- Inadequate doctrine
- Inadequate organizational structure
- Inadequate training



Risk Level
Extremely High
High
Moderate
Low

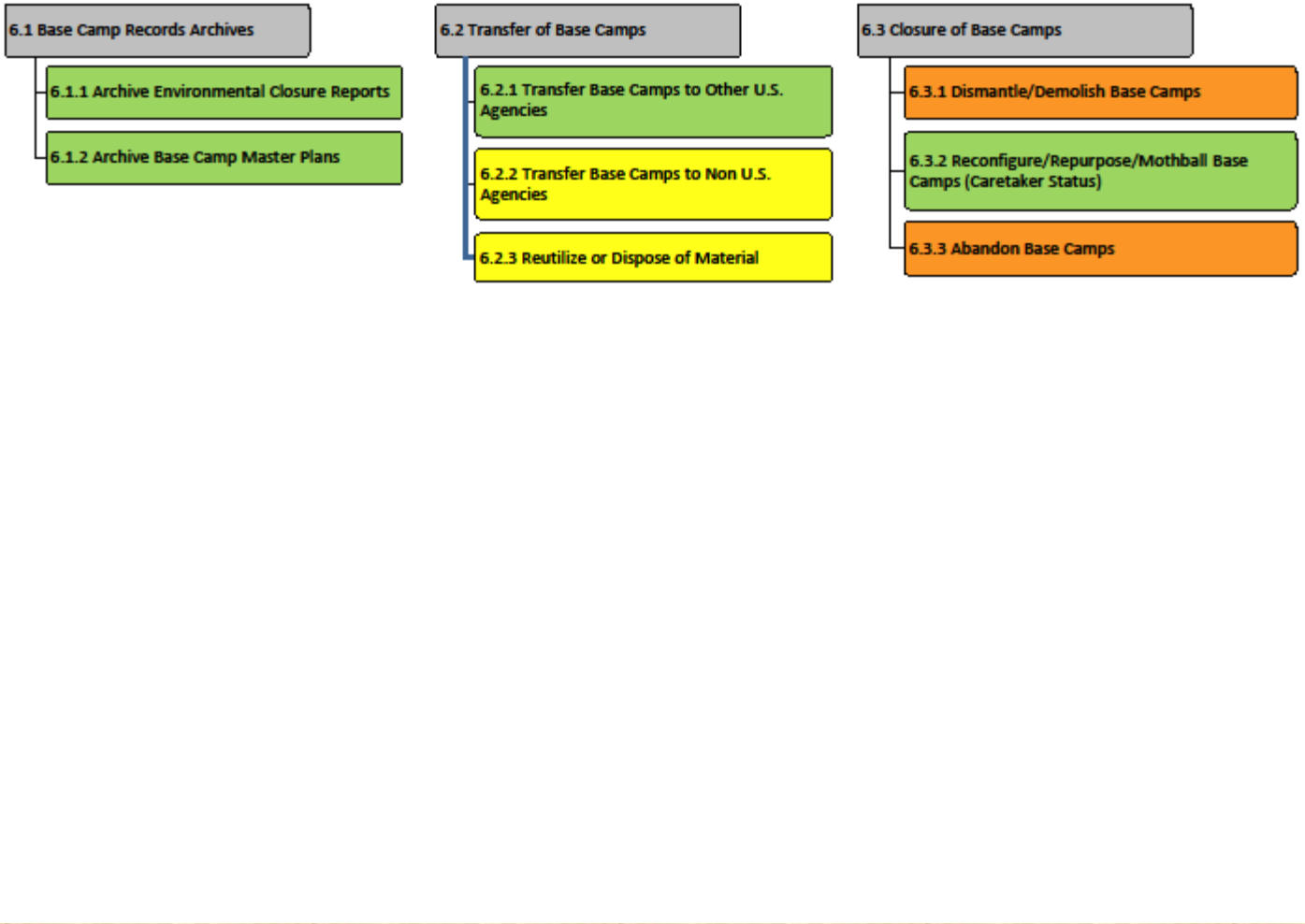
RC 6 - Transfer and Closure Tasks & Gaps Summary

The future force requires the capabilities to transfer or close base camps to protect U.S. interests and promote good relations during contingency operations in JIIM environments.

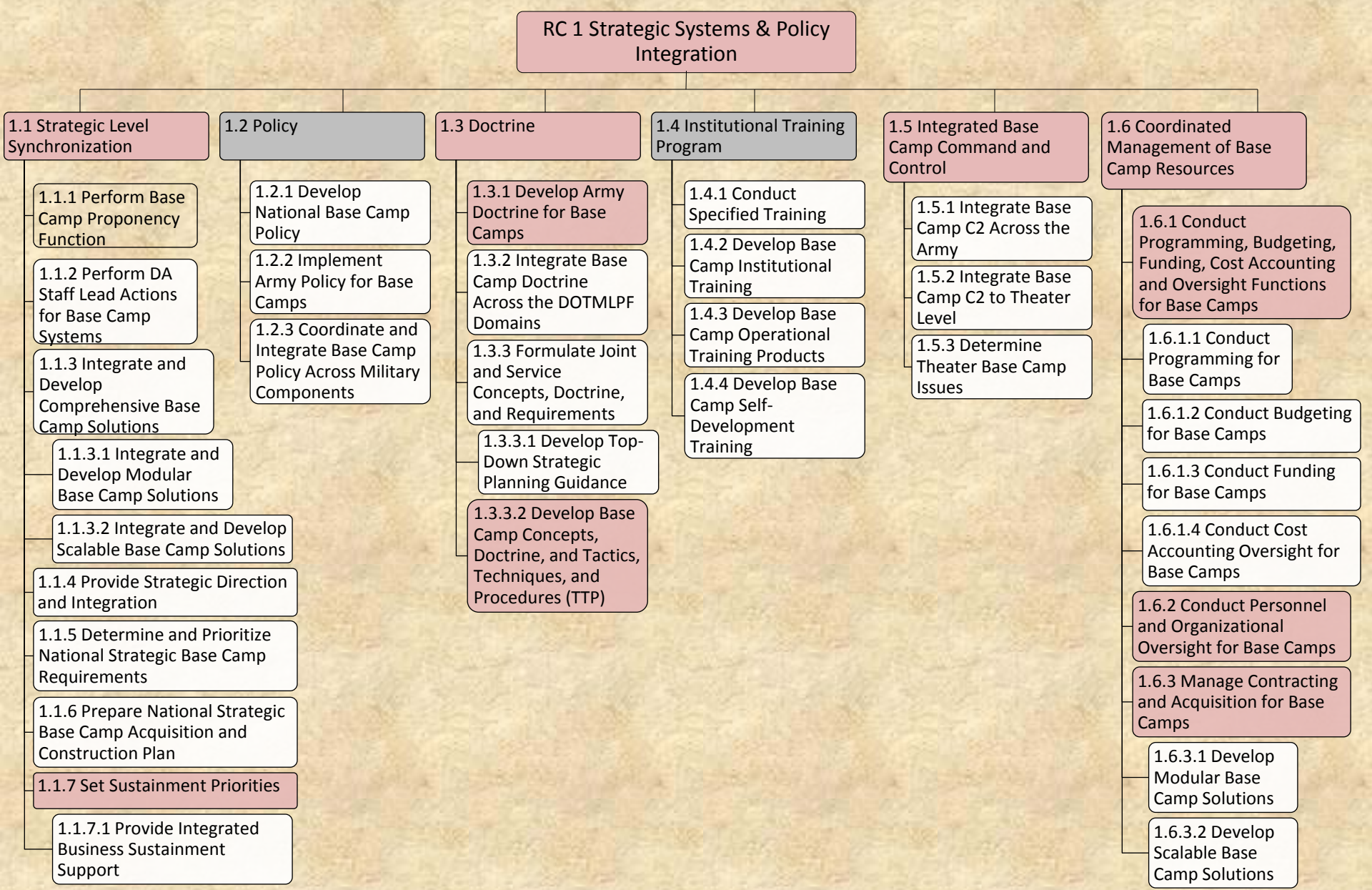
RC 6 had the least high-risk gaps

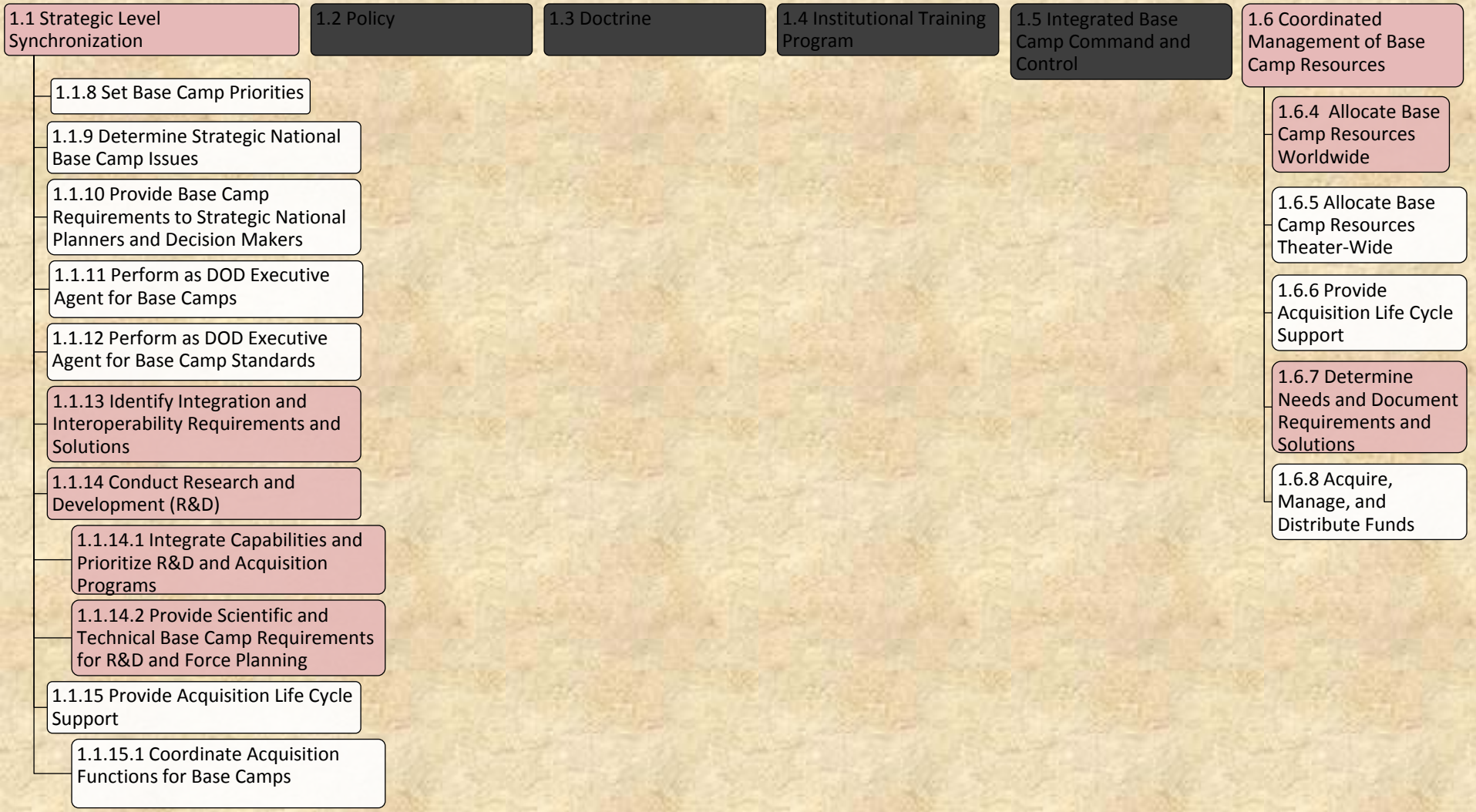
2 High Risk and 2 Moderate Risk Gaps are primarily linked to:

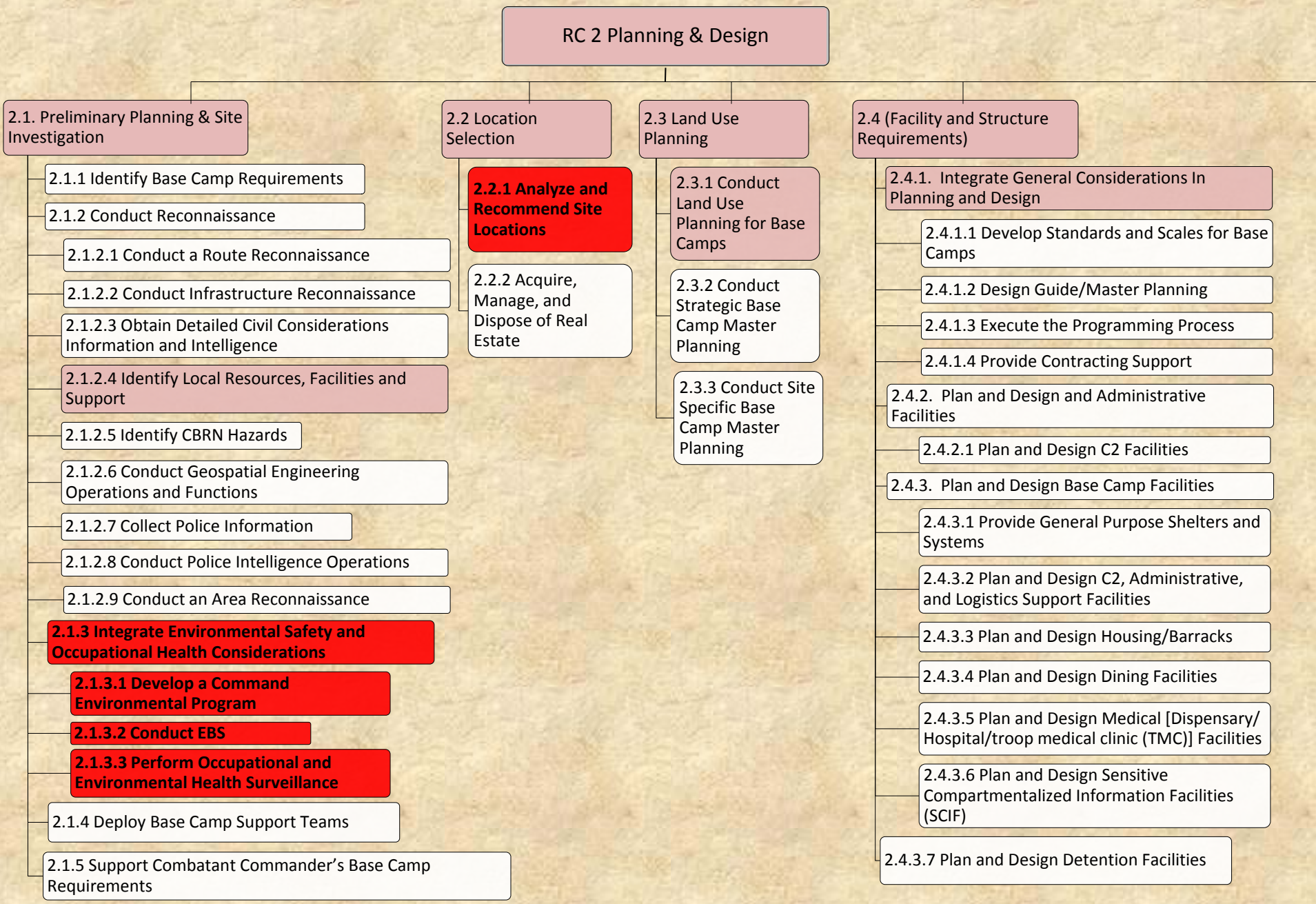
- inadequate policy and doctrine.

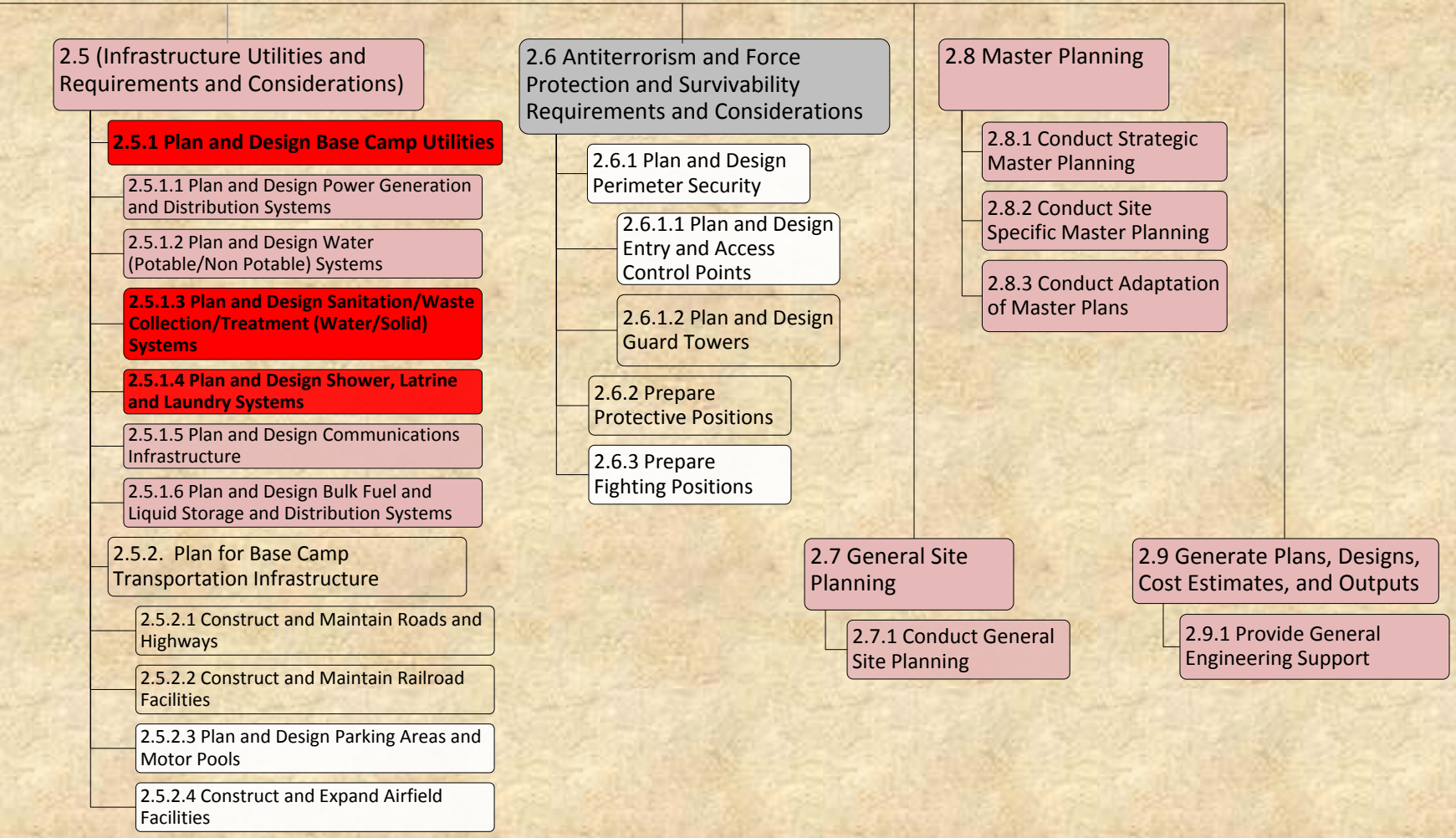


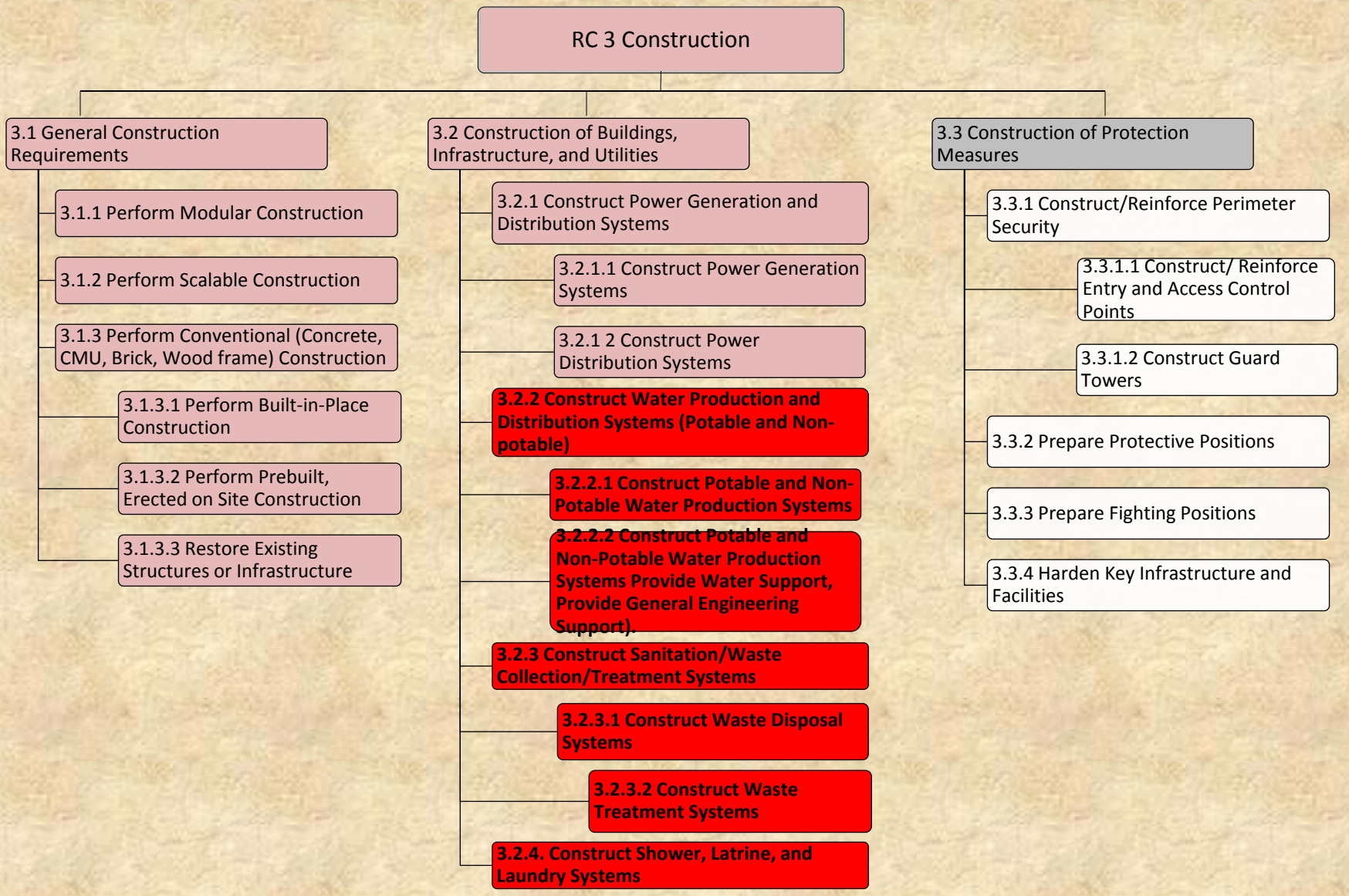
Risk Level
Extremely High
High
Moderate
Low

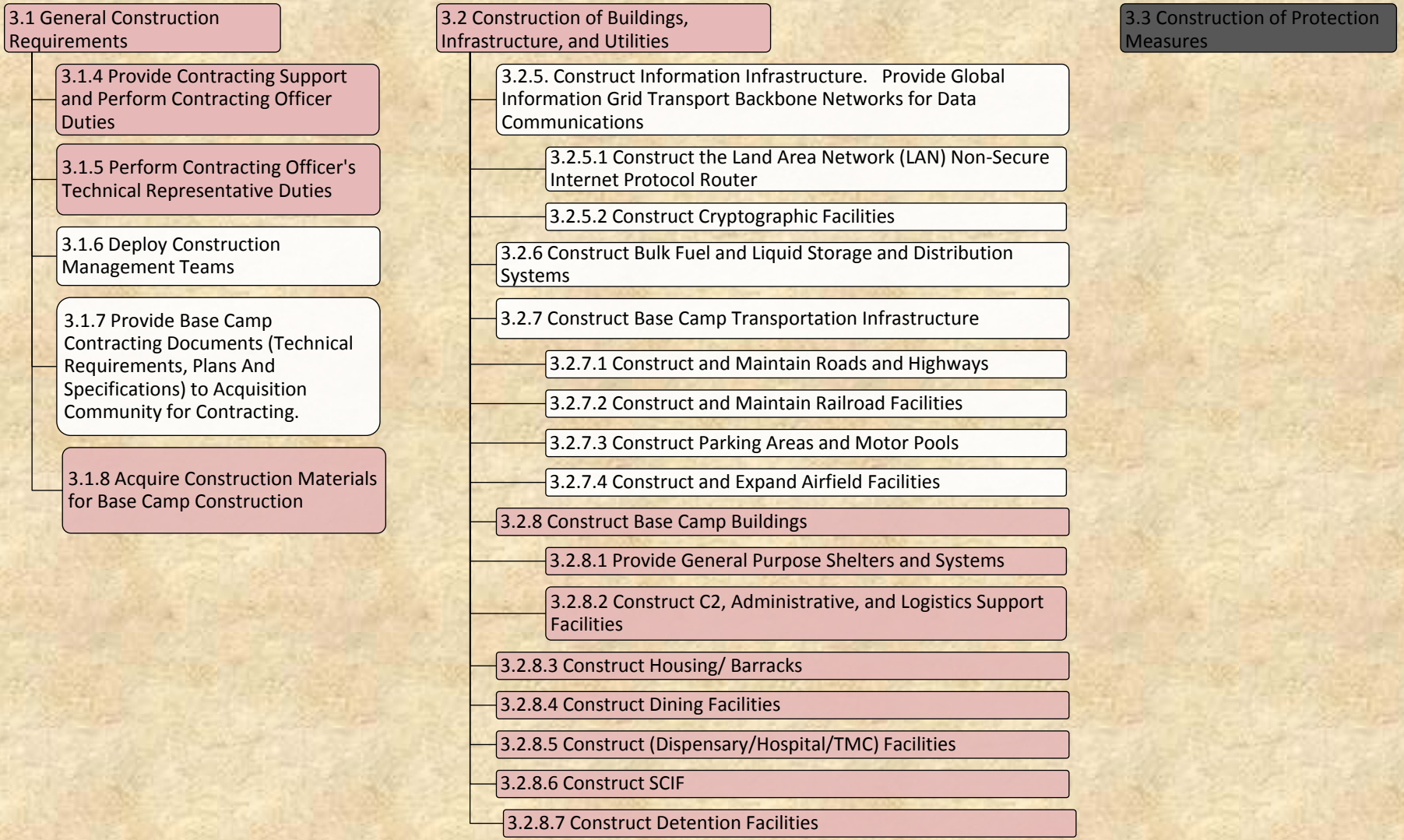

RC 1 Strategic Systems & Policy Integration
1.1 Strategic Level Synchronization
1.1.1 Perform Base Camp Proponency Function
1.1.2 Perform DA Staff Lead Actions for Base Camp Systems
1.1.3 Integrate and Develop Comprehensive Base Camp Solutions
1.1.3.1 Integrate and Develop Modular Base Camp Solutions
1.1.3.2 Integrate and Develop Scalable Base Camp Solutions
1.1.4 Provide Strategic Direction and Integration
1.1.5 Determine and Prioritize National Strategic Base Camp Requirements
1.1.6 Prepare National Strategic Base Camp Acquisition and Construction Plan
1.1.7 Set Sustainment Priorities
1.1.7.1 Provide Integrated Business Sustainment Support
1.2 Policy
1.2.1 Develop National Base Camp Policy
1.2.2 Implement Army Policy for Base Camps
1.2.3 Coordinate and Integrate Base Camp Policy Across Military Components
1.3 Doctrine
1.3.1 Develop Army Doctrine for Base Camps
1.3.2 Integrate Base Camp Doctrine Across the DOTMLPF Domains
1.3.3 Formulate Joint and Service Concepts, Doctrine, and Requirements
1.3.3.1 Develop Top-Down Strategic Planning Guidance
1.3.3.2 Develop Base Camp Concepts, Doctrine, and Tactics, Techniques, and Procedures (TTP)
1.4 Institutional Training Program
1.4.1 Conduct Specified Training
1.4.2 Develop Base Camp Institutional Training
1.4.3 Develop Base Camp Operational Training Products
1.4.4 Develop Base Camp Self-Development Training
1.5 Integrated Base Camp Command and Control
1.5.1 Integrate Base Camp C2 Across the Army
1.5.2 Integrate Base Camp C2 to Theater Level
1.5.3 Determine Theater Base Camp Issues
1.6 Coordinated Management of Base Camp Resources
1.6.1 Conduct Programming, Budgeting, Funding, Cost Accounting and Oversight Functions for Base Camps
1.6.1.1 Conduct Programming for Base Camps
1.6.1.2 Conduct Budgeting for Base Camps
1.6.1.3 Conduct Funding for Base Camps
1.6.1.4 Conduct Cost Accounting Oversight for Base Camps
1.6.2 Conduct Personnel and Organizational Oversight for Base Camps
1.6.3 Manage Contracting and Acquisition for Base Camps
1.6.3.1 Develop Modular Base Camp Solutions
1.6.3.2 Develop Scalable Base Camp Solutions

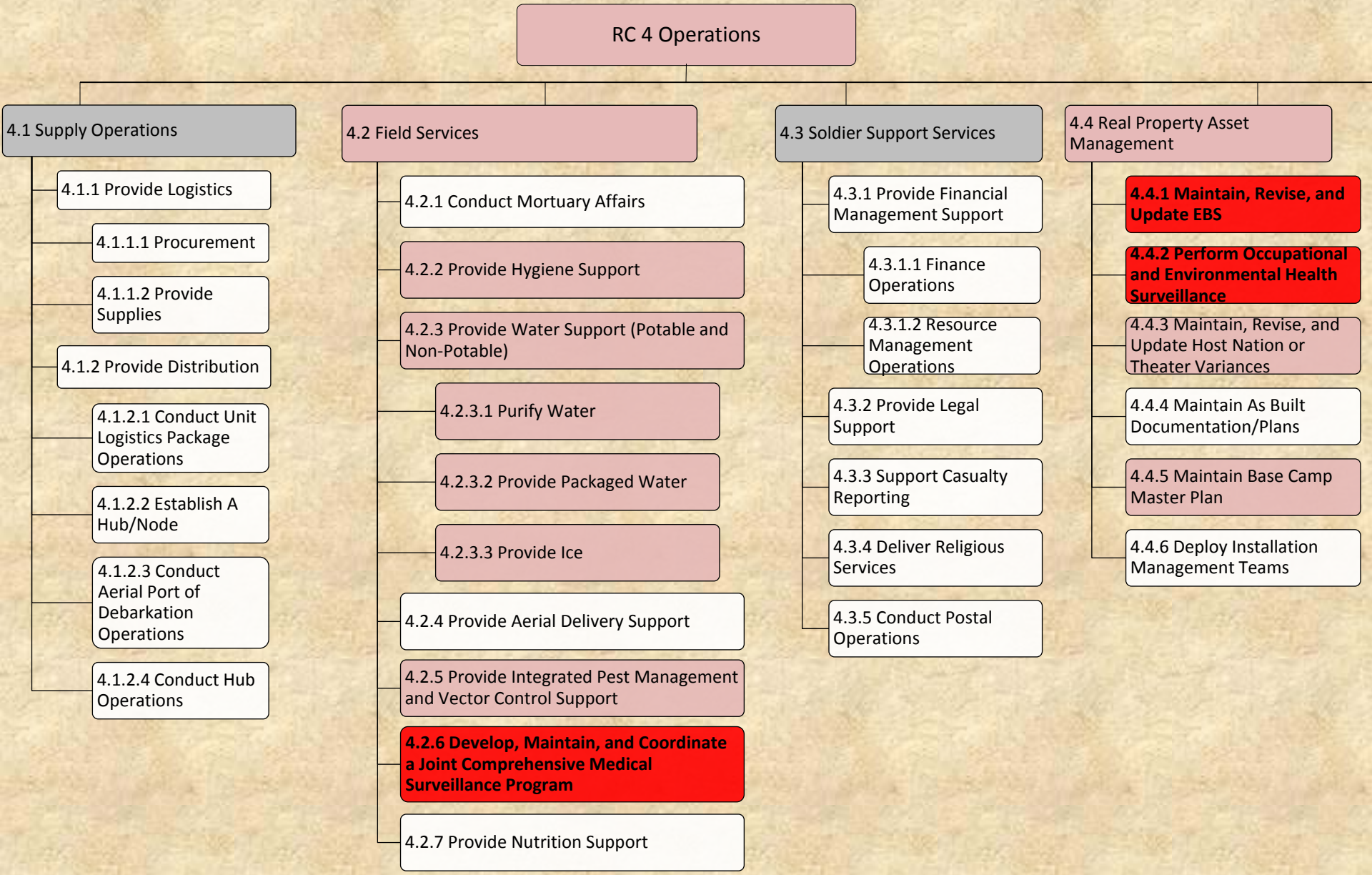

1.1 Strategic Level Synchronization
1.1.8 Set Base Camp Priorities
1.1.9 Determine Strategic National Base Camp Issues
1.1.10 Provide Base Camp Requirements to Strategic National Planners and Decision Makers
1.1.11 Perform as DOD Executive Agent for Base Camps
1.1.12 Perform as DOD Executive Agent for Base Camp Standards
1.1.13 Identify Integration and Interoperability Requirements and Solutions
1.1.14 Conduct Research and Development (R&D)
1.1.14.1 Integrate Capabilities and Prioritize R&D and Acquisition Programs
1.1.14.2 Provide Scientific and Technical Base Camp Requirements for R&D and Force Planning
1.1.15 Provide Acquisition Life Cycle Support
1.1.15.1 Coordinate Acquisition Functions for Base Camps
1.2 Policy
1.3 Doctrine
1.4 Institutional Training Program
1.5 Integrated Base Camp Command and Control
1.6 Coordinated Management of Base Camp Resources
1.6.4 Allocate Base Camp Resources Worldwide
1.6.5 Allocate Base Camp Resources Theater-Wide
1.6.6 Provide Acquisition Life Cycle Support
1.6.7 Determine Needs and Document Requirements and Solutions
1.6.8 Acquire, Manage, and Distribute Funds

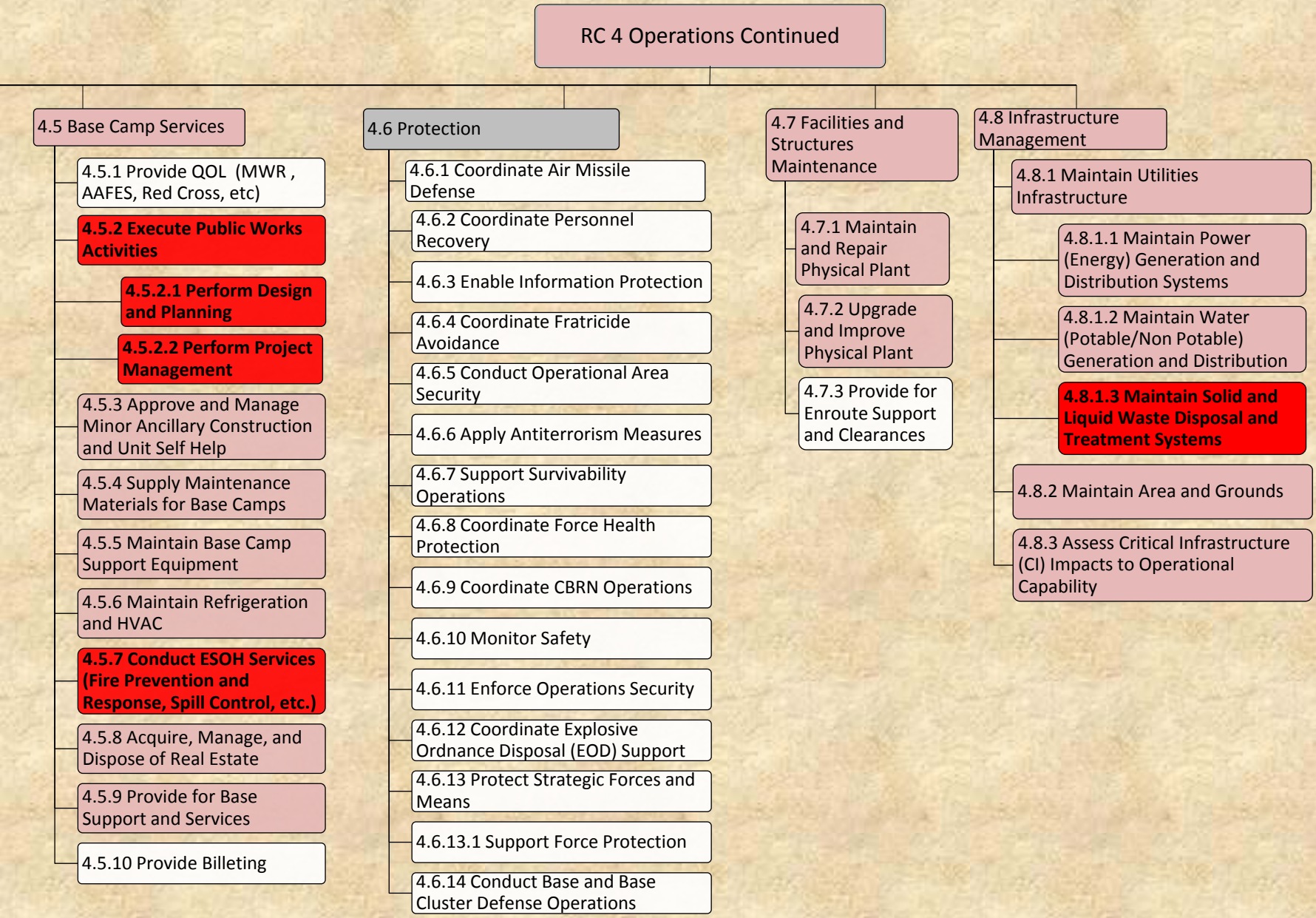

RC 2 Planning & Design
2.1. Preliminary Planning & Site Investigation
2.1.1 Identify Base Camp Requirements
2.1.2 Conduct Reconnaissance
2.1.2.1 Conduct a Route Reconnaissance
2.1.2.2 Conduct Infrastructure Reconnaissance
2.1.2.3 Obtain Detailed Civil Considerations Information and Intelligence
2.1.2.4 Identify Local Resources, Facilities and Support
2.1.2.5 Identify CBRN Hazards
2.1.2.6 Conduct Geospatial Engineering Operations and Functions
2.1.2.7 Collect Police Information
2.1.2.8 Conduct Police Intelligence Operations
2.1.2.9 Conduct an Area Reconnaissance
2.1.3 Integrate Environmental Safety and Occupational Health Considerations
2.1.3.1 Develop a Command Environmental Program
2.1.3.2 Conduct EBS
2.1.3.3 Perform Occupational and Environmental Health Surveillance
2.1.4 Deploy Base Camp Support Teams
2.1.5 Support Combatant Commander's Base Camp Requirements
2.2 Location Selection
2.2.1 Analyze and Recommend Site Locations
2.2.2 Acquire, Manage, and Dispose of Real Estate
2.3 Land Use Planning
2.3.1 Conduct Land Use Planning for Base Camps
2.3.2 Conduct Strategic Base Camp Master Planning
2.3.3 Conduct Site Specific Base Camp Master Planning
2.4 (Facility and Structure Requirements)
2.4.1. Integrate General Considerations In Planning and Design
2.4.1.1 Develop Standards and Scales for Base Camps
2.4.1.2 Design Guide/Master Planning
2.4.1.3 Execute the Programming Process
2.4.1.4 Provide Contracting Support
2.4.2. Plan and Design and Administrative Facilities
2.4.2.1 Plan and Design C2 Facilities
2.4.3. Plan and Design Base Camp Facilities
2.4.3.1 Provide General Purpose Shelters and Systems
2.4.3.2 Plan and Design C2, Administrative, and Logistics Support Facilities
2.4.3.3 Plan and Design Housing/Barracks
2.4.3.4 Plan and Design Dining Facilities
2.4.3.5 Plan and Design Medical [Dispensary/ Hospital/troop medical clinic (TMC)] Facilities
2.4.3.6 Plan and Design Sensitive Compartmentalized Information Facilities (SCIF)
2.4.3.7 Plan and Design Detention Facilities

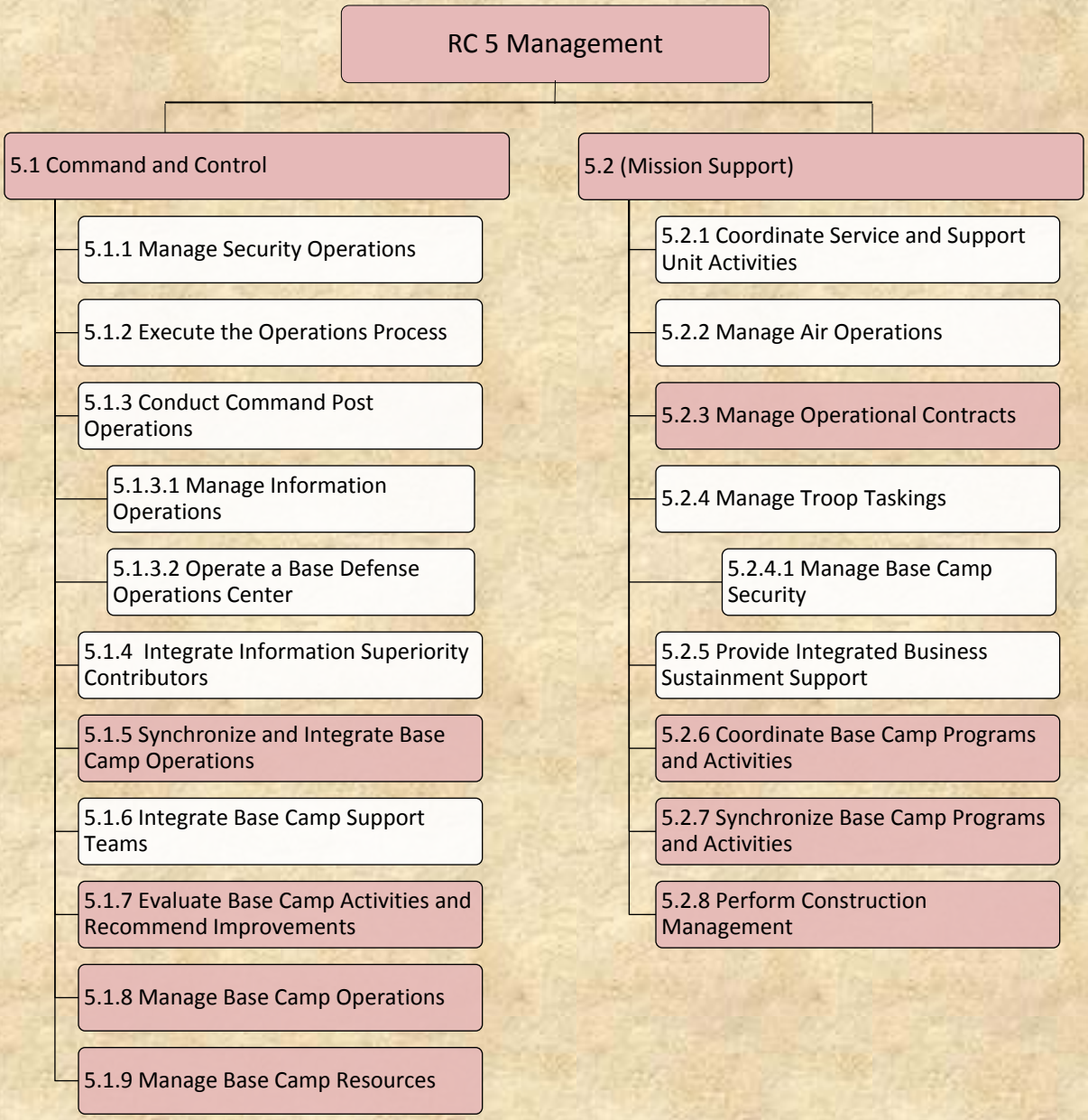

2.5 (Infrastructure Utilities and Requirements and Considerations)
2.5.1 Plan and Design Base Camp Utilities
2.5.1.1 Plan and Design Power Generation and Distribution Systems
2.5.1.2 Plan and Design Water (Potable/Non Potable) Systems
2.5.1.3 Plan and Design Sanitation/Waste Collection/Treatment (Water/Solid) Systems
2.5.1.4 Plan and Design Shower, Latrine and Laundry Systems
2.5.1.5 Plan and Design Communications Infrastructure
2.5.1.6 Plan and Design Bulk Fuel and Liquid Storage and Distribution Systems
2.5.2. Plan for Base Camp Transportation Infrastructure
2.5.2.1 Construct and Maintain Roads and Highways
2.5.2.2 Construct and Maintain Railroad Facilities
2.5.2.3 Plan and Design Parking Areas and Motor Pools
2.5.2.4 Construct and Expand Airfield Facilities
2.6 Antiterrorism and Force Protection and Survivability Requirements and Considerations
2.6.1 Plan and Design Perimeter Security
2.6.1.1 Plan and Design Entry and Access Control Points
2.6.1.2 Plan and Design Guard Towers
2.6.2 Prepare Protective Positions
2.6.3 Prepare Fighting Positions
2.8 Master Planning
2.8.1 Conduct Strategic Master Planning
2.8.2 Conduct Site Specific Master Planning
2.8.3 Conduct Adaptation of Master Plans
2.7 General Site Planning
2.7.1 Conduct General Site Planning
2.9 Generate Plans, Designs, Cost Estimates, and Outputs
2.9.1 Provide General Engineering Support

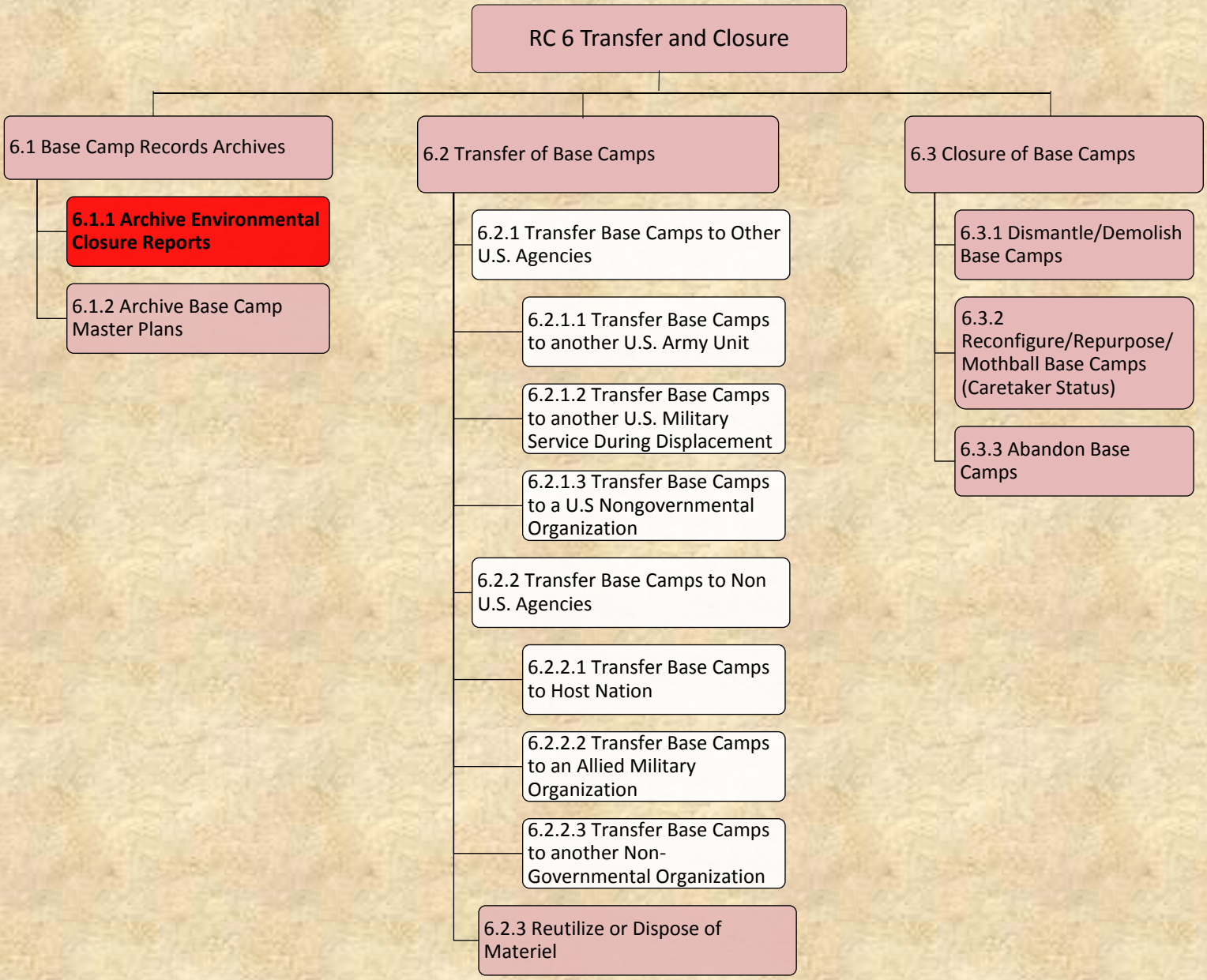

RC 3 Construction
3.1 General Construction Requirements
3.1.1 Perform Modular Construction
3.1.2 Perform Scalable Construction
3.1.3 Perform Conventional (Concrete, CMU, Brick, Wood frame) Construction
3.1.3.1 Perform Built-in-Place Construction
3.1.3.2 Perform Prebuilt, Erected on Site Construction
3.1.3.3 Restore Existing Structures or Infrastructure
3.2 Construction of Buildings, Infrastructure, and Utilities
3.2.1 Construct Power Generation and Distribution Systems
3.2.1.1 Construct Power Generation Systems
3.2.1 2 Construct Power Distribution Systems
3.2.2 Construct Water Production and Distribution Systems (Potable and Non-potable)
3.2.2.1 Construct Potable and Non-Potable Water Production Systems
3.2.2.2 Construct Potable and Non-Potable Water Production Systems Provide Water Support, Provide General Engineering Support).
3.2.3 Construct Sanitation/Waste Collection/Treatment Systems
3.2.3.1 Construct Waste Disposal Systems
3.2.3.2 Construct Waste Treatment Systems
3.2.4. Construct Shower, Latrine, and Laundry Systems
3.3 Construction of Protection Measures
3.3.1 Construct/Reinforce Perimeter Security
3.3.1.1 Construct/ Reinforce Entry and Access Control Points
3.3.1.2 Construct Guard Towers
3.3.2 Prepare Protective Positions
3.3.3 Prepare Fighting Positions
3.3.4 Harden Key Infrastructure and Facilities


3.1 General Construction Requirements
3.1.4 Provide Contracting Support and Perform Contracting Officer Duties
3.1.5 Perform Contracting Officer's Technical Representative Duties
3.1.6 Deploy Construction Management Teams
3.1.7 Provide Base Camp Contracting Documents (Technical Requirements, Plans And Specifications) to Acquisition Community for Contracting.
3.1.8 Acquire Construction Materials for Base Camp Construction
3.2 Construction of Buildings, Infrastructure, and Utilities
3.2.5. Construct Information Infrastructure. Provide Global Information Grid Transport Backbone Networks for Data Communications
3.2.5.1 Construct the Land Area Network (LAN) Non-Secure Internet Protocol Router
3.2.5.2 Construct Cryptographic Facilities
3.2.6 Construct Bulk Fuel and Liquid Storage and Distribution Systems
3.2.7 Construct Base Camp Transportation Infrastructure
3.2.7.1 Construct and Maintain Roads and Highways
3.2.7.2 Construct and Maintain Railroad Facilities
3.2.7.3 Construct Parking Areas and Motor Pools
3.2.7.4 Construct and Expand Airfield Facilities
3.2.8 Construct Base Camp Buildings
3.2.8.1 Provide General Purpose Shelters and Systems
3.2.8.2 Construct C2, Administrative, and Logistics Support Facilities
3.2.8.3 Construct Housing/ Barracks
3.2.8.4 Construct Dining Facilities
3.2.8.5 Construct (Dispensary/Hospital/TMC) Facilities
3.2.8.6 Construct SCIF
3.2.8.7 Construct Detention Facilities
3.3 Construction of Protection Measures


RC 4 Operations
4.1 Supply Operations
4.1.1 Provide Logistics
4.1.1.1 Procurement
4.1.1.2 Provide Supplies
4.1.2 Provide Distribution
4.1.2.1 Conduct Unit Logistics Package Operations
4.1.2.2 Establish A Hub/Node
4.1.2.3 Conduct Aerial Port of Debarkation Operations
4.1.2.4 Conduct Hub Operations
4.2 Field Services
4.2.1 Conduct Mortuary Affairs
4.2.2 Provide Hygiene Support
4.2.3 Provide Water Support (Potable and Non-Potable)
4.2.3.1 Purify Water
4.2.3.2 Provide Packaged Water
4.2.3.3 Provide Ice
4.2.4 Provide Aerial Delivery Support
4.2.5 Provide Integrated Pest Management and Vector Control Support
4.2.6 Develop, Maintain, and Coordinate a Joint Comprehensive Medical Surveillance Program
4.2.7 Provide Nutrition Support
4.3 Soldier Support Services
4.3.1 Provide Financial Management Support
4.3.1.1 Finance Operations
4.3.1.2 Resource Management Operations
4.3.2 Provide Legal Support
4.3.3 Support Casualty Reporting
4.3.4 Deliver Religious Services
4.3.5 Conduct Postal Operations
4.4 Real Property Asset Management
4.4.1 Maintain, Revise, and Update EBS
4.4.2 Perform Occupational and Environmental Health Surveillance
4.4.3 Maintain, Revise, and Update Host Nation or Theater Variances
4.4.4 Maintain As Built Documentation/Plans
4.4.5 Maintain Base Camp Master Plan
4.4.6 Deploy Installation Management Teams


RC 4 Operations Continued
4.5 Base Camp Services
4.5.1 Provide QOL (MWR , AAFES, Red Cross, etc)
4.5.2 Execute Public Works Activities
4.5.2.1 Perform Design and Planning
4.5.2.2 Perform Project Management
4.5.3 Approve and Manage Minor Ancillary Construction and Unit Self Help
4.5.4 Supply Maintenance Materials for Base Camps
4.5.5 Maintain Base Camp Support Equipment
4.5.6 Maintain Refrigeration and HVAC
4.5.7 Conduct ESOH Services (Fire Prevention and Response, Spill Control, etc.)
4.5.8 Acquire, Manage, and Dispose of Real Estate
4.5.9 Provide for Base Support and Services
4.5.10 Provide Billeting
4.6 Protection
4.6.1 Coordinate Air Missile Defense
4.6.2 Coordinate Personnel Recovery
4.6.3 Enable Information Protection
4.6.4 Coordinate Fratricide Avoidance
4.6.5 Conduct Operational Area Security
4.6.6 Apply Antiterrorism Measures
4.6.7 Support Survivability Operations
4.6.8 Coordinate Force Health Protection
4.6.9 Coordinate CBRN Operations
4.6.10 Monitor Safety
4.6.11 Enforce Operations Security
4.6.12 Coordinate Explosive Ordnance Disposal (EOD) Support
4.6.13 Protect Strategic Forces and Means
4.6.13.1 Support Force Protection
4.6.14 Conduct Base and Base Cluster Defense Operations
4.7 Facilities and Structures Maintenance
4.7.1 Maintain and Repair Physical Plant
4.7.2 Upgrade and Improve Physical Plant
4.7.3 Provide for Enroute Support and Clearances
4.8 Infrastructure Management
4.8.1 Maintain Utilities Infrastructure
4.8.1.1 Maintain Power (Energy) Generation and Distribution Systems
4.8.1.2 Maintain Water (Potable/Non Potable) Generation and Distribution
4.8.1.3 Maintain Solid and Liquid Waste Disposal and Treatment Systems
4.8.2 Maintain Area and Grounds
4.8.3 Assess Critical Infrastructure (CI) Impacts to Operational Capability


RC 5 Management
5.1 Command and Control
5.1.1 Manage Security Operations
5.1.2 Execute the Operations Process
5.1.3 Conduct Command Post Operations
5.1.3.1 Manage Information Operations
5.1.3.2 Operate a Base Defense Operations Center
5.1.4 Integrate Information Superiority Contributors
5.1.5 Synchronize and Integrate Base Camp Operations
5.1.6 Integrate Base Camp Support Teams
5.1.7 Evaluate Base Camp Activities and Recommend Improvements
5.1.8 Manage Base Camp Operations
5.1.9 Manage Base Camp Resources
5.2 (Mission Support)
5.2.1 Coordinate Service and Support Unit Activities
5.2.2 Manage Air Operations
5.2.3 Manage Operational Contracts
5.2.4 Manage Troop Taskings
5.2.4.1 Manage Base Camp Security
5.2.5 Provide Integrated Business Sustainment Support
5.2.6 Coordinate Base Camp Programs and Activities
5.2.7 Synchronize Base Camp Programs and Activities
5.2.8 Perform Construction Management


RC 6 Transfer and Closure
6.1 Base Camp Records Archives
6.1.1 Archive Environmental Closure Reports
6.1.2 Archive Base Camp Master Plans
6.2 Transfer of Base Camps
6.2.1 Transfer Base Camps to Other U.S. Agencies
6.2.1.1 Transfer Base Camps to another U.S. Army Unit
6.2.1.2 Transfer Base Camps to another U.S. Military Service During Displacement
6.2.1.3 Transfer Base Camps to a U.S Nongovernmental Organization
6.2.2 Transfer Base Camps to Non U.S. Agencies
6.2.2.1 Transfer Base Camps to Host Nation
6.2.2.2 Transfer Base Camps to an Allied Military Organization
6.2.2.3 Transfer Base Camps to another Non-Governmental Organization
6.2.3 Reutilize or Dispose of Materiel
6.3 Closure of Base Camps
6.3.1 Dismantle/Demolish Base Camps
6.3.2 Reconfigure/Repurpose/ Mothball Base Camps (Caretaker Status)
6.3.3 Abandon Base Camps